KNOWLEDGE, ATTITUDE, AND PRACTICE (KAP) OF DIABETES MELLITUS TYPE II PATIENTS IN MULTIDISCIPLINARY PROGRAM AT DIABETES MELLITUS CLINIC, PHANOMPHRAI HOSPITAL, PHANOMPHRAI DISTRICT, ROI-ET PROVINCE, THAILAND

Miss. Rapat Eknithiset

A Thesis submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Public Health Program in Public Health
College of Public Health Sciences
Chulalongkorn University
Academic Year 2009
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ความรู้ ทัศนคติ และการปฏิบัติตนของผู้ป่วยเบาหวานประเภท 2 ผู้เข้าร่วมโครงการดูแลตนเองที่คลินิกเบาหวาน ในโรงพยาบาลพนมไพร อำเภอพนมไพร จังหวัดร้อยเอ็ด ประเทศไทย

นางสาว รภัทร เอกนิธิเศรษฐ์

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธารณสุขศาสตรมหาบัณฑิต
สาขาวิชาสาธารณสุขศาสตร์
วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย
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ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Thesis Title	KNOWLEDGE, ATTITUDE, AND PRACTICE (KAP) OF DIABETES MELLITUS TYPE II PATIENTS IN MULTIDISCIPLINARY PROGRAM AT DIABETES MELLITUS CLINIC, PHANOMPHRAI HOSPITAL, PHANOMPHRAI DISTRICT, ROI-ET PROVINCE, THAILAND
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รภัทร เอกนิธิเศรษฐ์ : ความรู้ทัศนคติและการปฏิบัติตนของผู้ป่วยเบาหวานประเภท2 ผู้เข้าร่วมโครงการดูแลตนเองที่คลีนิกเบาหวานในโรงพยาบาลพนมไพร อำเภอพนมไพร จังหวัดร้อยเอ็ด ประเทศไทย. (KNOWLEDGE, ATTITUDE, AND PRACTICE (KAP) OF DIABETES MELLITUS TYPE II PATIENTS IN MULTIDISCIPLINARY PROGRAM AT DIABETES MELLITUS CLINIC, PHANOMPHRAI HOSPITAL, PHANOMPHRAI DISTRICT, ROI-ET PROVINCE, THAILAND) อ. ที่ปรึกษาวิทยานิพนธ์หลัก : อ. ดร. ประเทือง หงสรานากร, 114 หน้า.

การวิจัยนี้มีวัตถุประสงค์เพื่ออธิบายลักษณะทางสังคมของผู้ป่วยเบาหวานประเภท 2 ที่เข้าร่วมโครงการดูแลตนเองที่คลีนิกเบาหวานในโรงพยาบาลพนมไพร และ เพื่อชี้วัดระดับความรู้ในการดูแลตนเอง รวมถึงทัศนคติที่มีต่อการดูแลตนเอง และการปฏิบัติตนเองของผู้ป่วยเบาหวานประเภท 2 ที่เข้าร่วมโครงการฯ ทั้งนี้ยังมุ่งศึกษาถึงความสัมพันธ์ระหว่างลักษณะทางสังคมของผู้ป่วยเบาหวานประเภท 2 และระดับความรู้ในการดูแลตนเอง รวมถึงทัศนคติที่มีต่อการดูแลตนเอง และการปฏิบัติตนเองของผู้ป่วยเบาหวานประเภท 2 ที่เข้าร่วมโครงการฯ อีกด้วย โดยกลุ่มตัวอย่างที่ใช้ในการวิจัยเป็นผู้ป่วยโรคเบาหวาน ประเภท 2 ผู้เข้าร่วมโครงการฯ จริง จำนวน 430 ราย รวมถึงศึกษาปัจจัยที่มีผลทำให้ผู้ป่วยประสบความสำเร็จในการดูแลตนเองและผู้ป่วยที่ไม่ประสบความสำเร็จในการดูแลตนเองโดยใช้การสัมภาษณ์ในเชิงลึกกับกลุ่มตัวอย่าง 20คน ใน 4 กลุ่มตัวอย่างกลุ่มละ 5 คน ประกอบด้วย 1) พยาบาล2)ผู้ดูแลผู้ป่วยที่เข้าร่วมโครงการ 3) ผู้ป่วยที่ประสบความสำเร็จในการดูแลตนเอง 4)ผู้ป่วยที่ไม่ประสบความสำเร็จในการดูแลตนเอง

จากการวิเคราะห์ผลพบว่า ผู้ป่วยเบาหวานประเภท2 ที่เข้าร่วมโครงการฯ ร้อยละ 70.9 เป็นเพศหญิง มีอายุเฉลี่ย 51 ปี โดยผู้ป่วยทั้งหมด นับถือศาสนาพุทธ และร้อยละ 77.2 จบการศึกษาต่ำกว่าระดับประถมศึกษา ซึ่งร้อยละ 79.8 แต่งงานแล้ว ทั้งนี้ยังพบอีกว่าผู้ป่วยร้อยละ 42.1 ประกอบอาชีพเกษตรกรรม มีรายได้เฉลี่ยของครอบครัวต่อเดือนประมาณ 2,422 บาท มีรายจ่ายเฉลี่ยของครอบครัวต่อเดือนประมาณ 2,565 บาท

ระดับความรู้มีคะแนนเต็ม 38 คะแนน มีค่าเฉลี่ย 22.38 คะแนน ส่วนระดับทัศนคติเกี่ยวกับการดูแลตนเองของผู้ป่วยมีคะแนนเต็ม 60 คะแนน มีค่าเฉลี่ย 47.55 คะแนน และผู้ป่วยฯมีคะแนนเกี่ยวกับพฤติกรรมการดูแลตนเองของผู้ป่วยซึ่งมีคะแนนเต็ม 69 คะแนน โดยมีคะแนนเฉลี่ยอยู่ที่ 53.88 คะแนน เมื่อนำมาหาค่าไคสแควร์ พบว่า วิธีการปฏิบัติตนมีความสัมพันธ์กับความรู้ ,ทัศนคติ ,เพศ, การศึกษา, อาชีพ,ลักษณะงาน, ความถี่ของการตรวจวัดระดับน้ำตาลในเลือด และระยะเวลาที่ผู้ป่วยเป็นเบาหวาน ($p < .05$). จากผลการศึกษาปัจจัยที่มีผลทำให้ผู้ป่วยประสบความสำเร็จและไม่ประสบความสำเร็จได้แก่ ผู้ป่วยที่ประสบความสำเร็จในการดูแลตนเอง จะมีปัจจัยเหล่านี้ประกอบด้วย 1.) มีที่พักอยู่ใกล้โรงพยาบาลไปมาสะดวก 2.) เข้าใจในเนื้อหาและคำแนะนำจากโปรแกรมและสามารถนำไปประยุกต์ใช้ได้ในชีวิตประจำวัน และ 3.) มีคนคอยดูแลอยู่ที่บ้าน ในขณะที่ ผู้ป่วยที่ไม่ประสบความสำเร็จในการดูแลตนเองจะมีปัจจัยเหล่านี้ประกอบด้วย 1.) ที่พักอาศัยอยู่ไกลโรงพยาบาลทำให้ไปมาลำบาก 2.) ไม่เข้าใจในเนื้อหาและคำแนะนำจากโปรแกรมจึงไม่สามารถนำไปใช้ในชีวิตประจำวันได้ 3.) ไม่มีคนคอยดูแลและ 4.) ไม่เชื่อว่าโปรแกรมนี้จะทำให้มีสุขภาพดีขึ้นรวมถึงคิดว่าได้รับการรักษาไม่เท่าเทียมกับผู้ป่วยคนอื่นจึงทำให้ไม่อยากเข้าร่วมโปรแกรม .

สาขาวิชา...สาธารณสุขศาสตร์..... ลายมือชื่อนิสิต.....Rapat Ekanithiset.....

ปีการศึกษา 2552 ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก.....

5279116953 : MAJOR PUBLIC HEALTH

KEYWORDS : DIABETES MELLITUS TYPE II / KAP / ROI-ET/THAILAND

RAPAT EKNITHISET : KNOWLEDGE, ATTITUDE, AND PRACTICE (KAP) OF DIABETES MELLITUS TYPE II PATIENTS IN MULTIDISCIPLINARY PROGRAM AT DIABETES MELLITUS CLINIC, PHANOMPHRAI HOSPITAL, PHANOMPHRAI DISTRICT, ROI-ET PROVINCE, THAILAND.

THESIS ADVISOR : PRATHURNG HONGSRANAGON, Ph.D., 114 pp.

The aims of this research were to describe the socio-demographic characteristics of Diabetes Mellitus Type II patients joining "Multidisciplinary Program" at Diabetes Mellitus Clinic, in Phanomphrai Hospital and to identify the level of self-care knowledge, including attitude and practice of the patients. The study also focused on the relationship between patients' socio-demographic characteristics and the level of self-care knowledge, attitude and practice. The subjects were DM type II patients who actually joined the program for a number of 430. The study also described the factors influencing the success and the non-success of the patients in their self care through an in-depth interview with 20 subjects in 4 sample groups each of 5 persons, they were 1) nurses 2) care givers of the patients 3) successful patients for their self care 4) unsuccessful patients for their self care. Based on the result of data analysis, DM type II patients joining the program were mostly females (70.9%) with an average age of 51 years old. All of them were Buddhists. Seventy-seven point two percent of them had an educational background lower than prathomsuksa level. Furthermore, 79.8% of the subjects were married and 42.1% of them were farmers. The average patients' household income was approximate 2,422 baht/month while their household expense was about 2,565 baht/month. Out of 38 scores on knowledge, the subjects had a mean of 22.38 scores, out of 60 scores on attitude, the subjects had a mean of 47.55 scores, and out of 69 scores on practice, the subjects had a mean of 53.88 scores. By using Chi-Square test, it found that practice had the relationship with knowledge, attitude, sex, educational level attained, occupation, field of work, frequency of blood sugar test, and duration of diabetes suffering ($p < .05$). Factors influencing successful and unsuccessful patients in their self care practice included 1.) living near the hospital 2.) understanding the instructions and suggestions given by the program and could apply them in their daily life and 3) having a care-taker at home (for successful patients). On the other hand, the unsuccessful self-care behavior patients were influenced by 1.) living in a remote area 2.) not understanding the instructions and suggestions given thus no application on their daily living 3.) not having a care-taker at home, and 4.) having an attitude that this program could not improve their health and that there was an unequal treatment thus not motivating them to join the program.

Field of Study: Public Health Student's Signature Rapat Eknithiset

Academic Year: 2009 Advisor's Signature

ACKNOWLEDGEMENTS

This preparation for this Thesis would not have been achievable without the support, hard work and endless efforts of a significant number of individuals and institutions.

First of all, I would like to express my deep and sincere gratitude to my Thesis Advisor, Dr. Prathurng Hongsranagon, Ph.D. Her extensive knowledge and rational way of thinking have provided a ground for my studies. Her understanding and encouragement, have guided me through this thesis.

I am truly grateful to Professor Surasak Taneepanichskul, M.D., Dean of the College of Public Health, Chulalongkorn University., Assistant Professor Dr. Ratana Somrongthong, Ph.D., Chair person, Dr. Nanta Auamkul, M.D., M.P.H., External member, for their constructive and detailed comments, supervision and for their vital support throughout this work.

I owe my genuine appreciation to Piyalumporn Havanont, M.Sc., for her guidance and comments in the field of Statistics.

I wish to express my warm and truthful thank to Dr. Jitra Tantivatanasatien, M.D., Dr. Sirinate Krittiyawong, M.D., for their kind assistance, comments and knowledge about diabetes, also for sacrificed their time to review my proposal and questionnaire. I wish to also show my appreciation to Mr. Pissanu Natavil for scheduled me in to see both Dr. Jitra and Dr. Sirinate at Theptarin Hospital.

I kindly thank Dr. Purithat Sutthiprapa, M.D., at Phanomphrai Hospital for reviewing my questionnaire and giving valuable comments. I wish to express my kind gratitude to Dr. Adisorn Wattanawongsingha, M.D., Director of Phanomphrai Hospital, for authorizing me in the data collection at Phanomphrai Hospital and all the nurses and staff for their collaborations.

A special thank goes to Dr. Chanon Thammavijitkul, M.D., whom has been a brother as well as a mentor. He taught me several things about diabetes and guided me in writing this thesis.

During this work I have collaborated with many colleagues for whom I have great regard, and I wish to extend my warmest thank to all those who have helped me with my work.

Lastly, I would like to thank my family for their supports in everyway from Financial to Emotional. Without their supports, I could not have done it.

Rapat Eknithiset

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LIST OF ABBREVIATIONS

ADA	American Diabetes Association
ADA	Asian Diabetes Association
BMI	Body Mass Index
DM	Diabetes Mellitus
FBS	Fasting Blood Sugar
GBP	The abbreviation for the British pound sterling
HbA1C	Hemoglobin A1c
IHR	Institute of Health Research
KAP	Knowledge Attitude Practice
MODY	Maturity Onset Diabetes of the Young
NWHIC	National Women's Health Information Center
OPD	Out Patient Department
PCU	Primary Care Unit
SPSS	Statistic Package for the Social Science
UK	United Kingdom
WHO	World Health Organization

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จุฬาลงกรณ์มหาวิทยาลัย

CHAPTER I

INTRODUCTION

1.1 Background and Rationale

Diabetes is the unremitting diseases that cause high rate of death around the world. Every year many people are suffering from this disease. “Diabetes is now reaching epidemic levels. If left unchecked, 1 in 14 adults or an estimated 380 million people world wide are predicted to have diabetes by 2025”. (Australian Government: Australian Institute of Health and Welfare,2008). Almost everyone knows someone who has diabetes. An estimated 23.6 million people in the United States 7.8 percent of the population—have diabetes, a serious, lifelong condition. Of those, 17.9 million have been diagnosed, and 5.7 million have not yet been diagnosed. In 2007, about 1.6 million people ages 20 or older were diagnosed with diabetes (National Diabetes Information Clearinghouse, 2009). In other words, more than 180 million people died because of the disease. Diabetes Type I is primarily the result of the inability to produce insulin due to beta cell destruction in the pancreas which accounts for fewer people with diabetes. However, Diabetes Type II which is a result from a combination of insufficient insulin production and/or resistance of the cells of the body to the actions of insulin affect more than 80% of those diagnosed with diabetes (Registered Nurses’ Association of Ontario, 2004). Global research illustrated that most people who have diabetes live in low and middle- income countries. Thailand has been selected by WHO as the pilot country to solve the diabetes problem. As the result, Ministry of Public health Thailand created the project to promote the self care behaviors for diabetes across the country to prevent and reduce a number of diabetes patients.

Diabetes is common in Thailand, but one-half of all cases are undiagnosed. Because diagnosed diabetes is likely to be treated with proven, low-cost, preventive therapies such as glucose lowering and blood pressure lowering, initiatives that

(2.4million people), which included 4.8% previously diagnosed and 4.8% newly diagnosed. The prevalence of impaired fasting glucose was 5.4% (1.4 million people). Diagnosed diabetes, undiagnosed diabetes, and impaired fasting glucose were associated with greater age, BMI, waist-to-hip ratio, systolic blood pressure, total cholesterol, and serum creatinine levels. The majority of individuals with diagnosed diabetes had received dietary or other behavioral advice, and 82% were taking oral hypoglycemic therapy. Blood pressure-lowering therapy was provided to 67% of diagnosed diabetic patients with concomitant hypertension. (American Diabetes Association, 2010)

Thailand has a high rate of diabetes patients, especially Diabetes Type II which is as high as 99% (Aekplakorn et al., 2003). In Roi-Et province which is located in the northeast of the country, from the chronic diseases situational study, it found that more than 20 years old Roi-Et residents had their prevalence of diabetes between 5.5-6.1%. Complications mostly found were pain or numb of legs or feet, deteriorated retina, foot ulcers, and cardiovascular disease. Being advised by the Institute of Health Research (IHR), Chulalongkorn University, Roi-Et province has its strategic planning to (1) screen the risk groups of Diabetes Type II, and (2) to initiate ways to reduce risk factors through self care behaviors and changes of biological and behavioral risk factors (Institute of Health Research, 2006).

Especially in Phanomphrai Hospital which is located in Phanomphrai District, Roi-Et province and is one of the networking hospitals for diabetes in Roi-Et province, it found that the situation of diabetes and high blood pressure in year 2003, there were 1,754 diabetes patients which increased to 2.148 in 2004, and 2,447 in 2005. Out of total Phanomphrai District 100,870 residents, prevalence of diabetes was 5.1% in 2006 (2,460 patients) and 5% in 2007 (2,746 patients) (Phanomphrai Hospital, 2008).

In order to improve the situation of diabetes in Phanomprai District, the Phanomphrai Hospital has initiated the multidisciplinary program of Diabetes Mellitus Clinic. The program links the collaboration from medical and paramedic personnel in the hospital, namely, physicians, pharmacists, nutritionists, nurses, and health workers. By concentrating on perspectives of diet control, exercising, diabetes

In order to improve the situation of diabetes in Phanomprai District, Phanomphrai Hospital has initiated the multidisciplinary program of Diabetes Mellitus Clinic. The program links the collaboration from medical and paramedic personnel in the hospital, namely, physicians, pharmacists, nutritionists, nurses, and health workers. By concentrating on perspectives of diet control, exercising, diabetes drug taking, and self –health care, the hospital aims at improving knowledge, attitudes, and practice of self care behaviors among diabetes patients in order to significantly reduce the incidence of diabetes among Phanomprai District residents and to improve the situation of diabetes patients (Phanomphrai Hospital, 2008). By investigating into the four criteria of successful multidisciplinary program participants, namely, (1) blood sugar level < 140 mg/dl (2) less than 130/80 (Systolic/Diastolic) mmHg (3) HbA1C at 7.0 (4) low risks of complications at feet and eyes, the objective of this research is to learn about the factors associated with successful self-care behaviors of diabetic patients type II through multidisciplinary program of Diabetes Mellitus Clinic, Phanomphrai Hospital, Phanomphrai District, Roi-Et province.

1.2 Research Questions

1.2.1 What are the socio - demographic characteristics among Diabetes Mellitus Type II patients who get the multidisciplinary program at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand?

1.2.2 What is the level of knowledge of self care behaviors learnt from multidisciplinary program (diet control, exercising, diabetes drug taking, and self-health care) at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand?

1.2.3 What is the level of attitudes of self care behaviors learnt from multidisciplinary program (diet control, exercising, diabetes drug taking, and self-health care) at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand?

1.2.4 What is the level of practice of self care behaviors learnt from multidisciplinary program (diet control, exercising, diabetes drug taking, and self-

Diabetes Mellitus Type II patients who get the multidisciplinary program at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand?

1.2.6 What influenced the Diabetes Mellitus Type II patients who join the multidisciplinary program to either turn out as the successful self care behaviors or the unsuccessful self care behaviors?

1.3 Objectives

1.3.1 To describe the socio- demographic characteristics among Diabetes Mellitus Type II patients who get the multidisciplinary program at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

1.3.2 To indicate the level of knowledge of self care behaviors learnt from multidisciplinary program (diet control, exercising, diabetes drug taking, and self-health care) at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

1.3.3 To elaborate the level of attitudes of self care behaviors learnt from multidisciplinary program (diet control, exercising, diabetes drug taking, and self-health care) at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

1.3.4 To assess the level of practice of self care behaviors learnt from multidisciplinary program (diet control, exercising, diabetes drug taking, and self-health care) at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

1.3.5 To determine the relationship between socio-demographic characteristics, patient history, knowledge, attitudes and practice of self care behaviors among Diabetes Mellitus Type II patients who get the multidisciplinary program at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

program at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

1.3.6 To determine the influential factors of the Diabetes Mellitus Type II patients who join the multidisciplinary program to either turned out as the successful self care behaviors or as the unsuccessful self care behaviors.

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1.4 Conceptual Framework

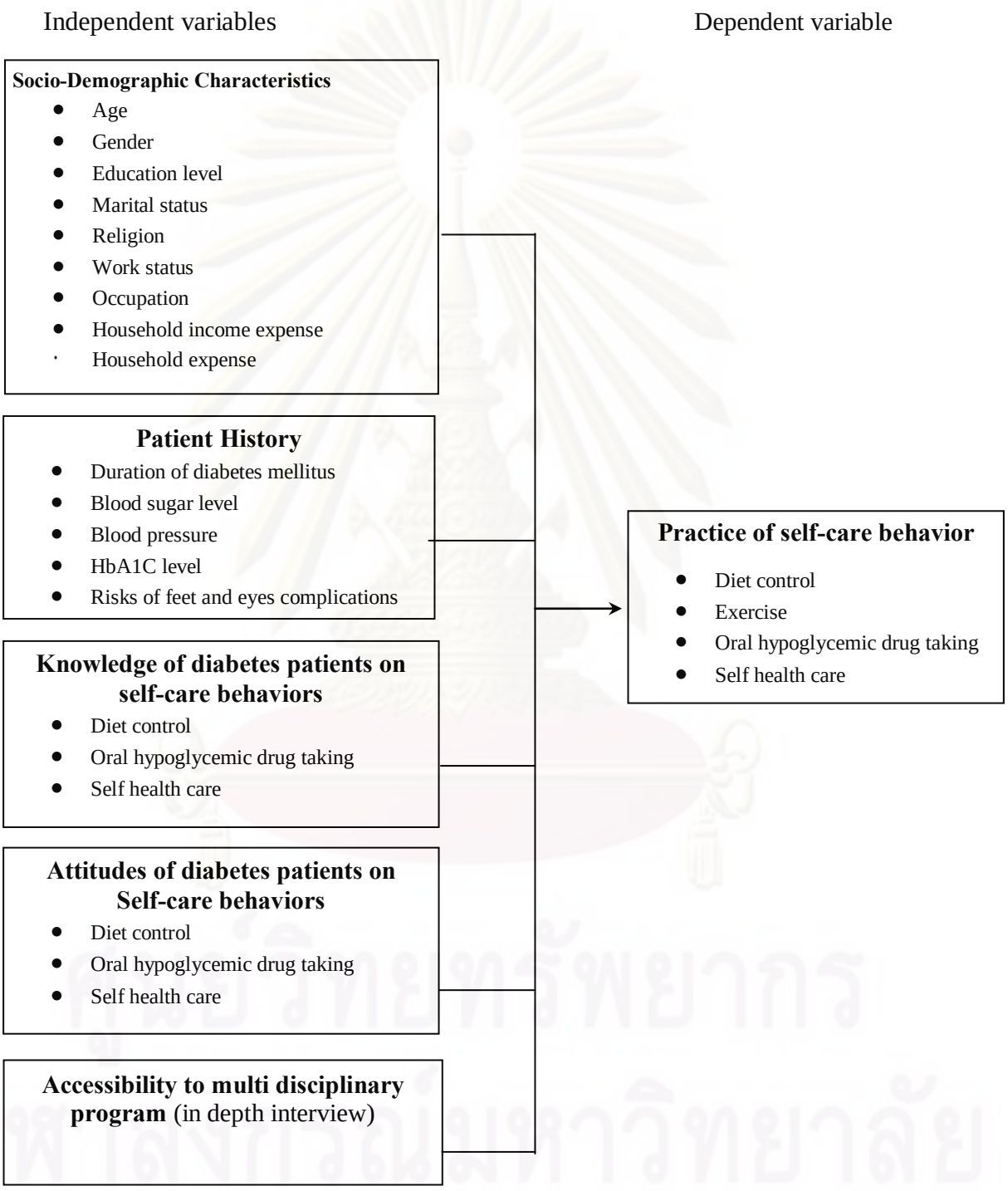

Figure 1 Conceptual Framework

1.5 Operational Definition

1.5.1 Independent Variables

1.5.1.1 Socio-Demographic Characteristics

- Age: refers to how old the participant is at the time that the interview is conducted
- Gender: refers to male and female
- Educational level: refers to the level of education that the participant has completed at the time of the interview
- Marital status: refers to the civil status of the participant at the time of the interview
- Religion: refers to the patient's personal belief and faith
- Work Status: refers to the full time work, part time work, retiree, unemployed, stay at home
- Occupation: refers to the occupation of the patients
- Household income: average total monthly household income
- Household expense: average total monthly household expense

1.5.1.2 Patients Historical

- Duration of diabetes mellitus: refers to the time period when diabetes mellitus has been diagnosed (year)
- Blood Sugar Level: refers to blood sugar level at the time of checking by physician's appointment
- Blood Pressure: refers to blood pressure level at the time of checking by physician's appointment
- HbA1C level: refers to Hemoglobin A1c level at the time of checking by physician's appointment
- Risk of feet and eyes complications: refers to the level of risk of complication at feet and eyes at the time checking by physician's appointment
-

1.5.1.3 Knowledge of diabetes patients on self-care behaviors

- Diet control: refers to knowledge and information regarding food control of patients
- Oral hypoglycemic drug taking: refers to knowledge of patient regarding oral hypoglycemic drug taking
- Self health care: refers to knowledge and ability toward self health care

1.5.1.4 Attitudes of diabetes patients on self-care behavior

- Diet control: refers to patient's perspective regarding food control
- Oral hypoglycemic drug taking: refers to patient's perspective regarding oral hypoglycemic drug taking
- Self health care: refers to patient's perspective toward self health care

1.5.2 Dependent Variable

Practice of self-care behaviors: refer to diet control, exercising, oral hypoglycemic drug taking, self-health care, in compliance with the learning gained from the multidisciplinary program

1.6 Keywords

Knowledge-expertise and skills acquired by a person through experience or education. The theoretical or practical understanding of a subject

Attitude- a hypothetical construct that represents an individual's degree of like or dislike for an item. Attitudes are generally positive or negative views of a person, place, thing, or event. This is often referred to as the attitude object

Practice- systematic training by multiple repetitions

Multidisciplinary program- a program that develop in order to provide knowledge and information to patient

Phanomphrai Hospital- hospital which based in Phanomphrai suburb

Roi-ET- one of the provinces (changwat) of Thailand, located in the North-East of Thailand.

Thailand- Thailand is a country which located in South-eastern Asia, bordering the Andaman Sea and the Gulf of Thailand, southeast of Burma.

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CHAPTER II

LITERATURE REVIEW

This section reviews the literature on books, articles, research papers and news clip that relate to diabetes. The literature review has been put into seven main areas of concern. The first section mentions about the definition of diabetes from several academic people. This part as well includes the information regarding type II diabetes, system of diabetes and complication from diabetes. The second section gives overview of statistic about diabetes both national and international. The third section explains the diabetes care and prevention. The fourth section gives example of international diabetes control project. The final section gives detail about diabetes control project in Thailand which includes the health care project at Phanompharai hospital.

2.1 The definition of diabetes

According to American Diabetes Association, diabetes is the disease that occurs when the body cannot produce or absorb insulin. Insulin is an important hormone to help convert sugar, starches and other food into energy. So what will happen when the body cannot convert sugar or starches into energy; the sugar will remain in bloodstream and the body will not have enough energy to create daily life activity. WHO also added that diabetes is the chronic disease that is not easy to keep under the control. American Diabetes Association believes that diabetes seems to happen from two major key concern 1) genetic and 2) environmental factors. The genetic is seemed to transfer from one generation to another generation while the environmental factor such fat and obese, living without exercise; consume too much fat and starches can lead to diabetes as well as genetic (American Diabetes Association, 2009).

The greatest increase is projected for economically developing countries, such as Thailand, that already account for approximately two-thirds of all individuals with

diabetes. In these countries, the number of people with diabetes is projected to increase almost threefold over this time period from 84 to 228 million (King H, Aubert R, Herman W.,1998). Diabetes greatly increases the risks of macro- and microvascular diseases (Saydah S, Eberhardt M, Loria C and Brancati F. 2002), with similar proportional effects on disease risk observed in Western (Kuller,L., et al., 2000) and Asian (Asia Pacific Cohort Studies Collaboration, 2002) populations.

2.1.1 Type II diabetes

Basically there are two type of diabetes which is: (1) type I diabetes and (2) type II diabetes. However, this research based on type II diabetes. As the result, this section only mentions and explains Type II diabetes.

Type II diabetes is the famous types of diabetes in which most people who have diabetes carry occurs to have type II. Type II diabetes is happened when the body cannot produce enough insulin to help turn sugar into form of energy. Type II diabetes additionally have cell that take no notice of insulin that necessary to help create energy. The direct consequence of this situation is that the body will not have enough energy and starve for it while in the long run the insulin that does not use by cell will remain in bloodstream and attack eyes, kidney and heart (American Diabetes Association, 2008).

Moreover, Hussain, Clussen, Ramachandran and Willams (2007) defined type II diabetes as a group of metabolic disorder typified by chronic hyperglycemia which leads to a deficiency of insulin or reduce ability to use insulin signal. Type II diabetes is the illness seems to develop continually. Even though the body still produces insulin, there are several causes that lead to type II diabetes illness which are: (1) the body does not produces enough insulin, (2) the cells do not use insulin properly which known as insulin resistance and (3) a combination of both causes. Type II diabetes was called as “maturity onset” or “Non-Insulin dependent”. This disease usually happens in older people age more than 40. However, it may sometime develop in younger people (Hussain et al., 2007).

The finding of type II diabetes mellitus runs in families. In part, this tendency is due to children learning bad habits eating a poor diet, not exercising from their parents. But there is also a genetic basis. In general, if the parents have type II diabetes, the risk of the child getting diabetes is 1 in 7 if they were diagnosed before age 50 and 1 in 13 if they were diagnosed after age 50. Some scientists believe that a child's risk is greater when the parent with type II diabetes is the mother. If both parents have type II diabetes, your child's risk is about 1 in 2. People with certain rare types of type II diabetes have different risks. If they have the rare form called maturity onset diabetes of the young (MODY), their child has almost a 1-in-2 chance of getting it, too. (American Diabetes Association, 2010a).

According to Bailey (2000) who has examined potential of new treatments for type II diabetes, he mentioned that the treatment of type II diabetes is complicated due to many factors innate to the disease process. The commonly initial treatment consists of nutritional therapy, increased physical activity such as exercise, and use of oral agents to treat hyperglycemia. Treatment with insulin is often reserved for patients who at diagnosis complain of symptoms suggestive of insulinopenia or who are unable to control glycemic levels with one or multiple oral agents. Some patients on oral agents, however, are often unable to maintain adequate blood glucose control long before insulin therapy is initiated. This is known as secondary failure to oral therapy

2.1.2 Symptom of diabetes

The patient with diabetes frequently needs to discharge urine and feel thirsty all the time with repeatedly hungry, tired, exhausted, and with high level of glucose in bloodstream. In the case of insulin - dependent diabetes, the symptom will move very fast together with extreme weight lost in a week or in a month. While in the non-insulin dependent case, the symptom will unremitting such as the weight might be lost a little bit but in some cases, patients might gain weight or become obese (Diabetes Association of Thailand, 2007). Even through diabetes is the dangerous and violent disease but under the good control and management, the patient can live longer and enjoy there lives as normal people.

2.1.3 Complication from diabetes

Diabetes can cause short term and long term complication. Short term complications can happen quickly such as hypoglycemia, ketoacidosis, and hyper-osmolar syndrome. Patients need to be aware of their signs and symptoms and what to do to reverse them. Long term complications such as heart disease, kidney disease, neuropathy, diseases of the eyes, peripheral vascular disease and more can seriously compromise the diabetic patient (Diabetes UK, 2008).

In addition, American Diabetes Association (2009), there is mainly 6 complications from diabetes. It can: (1) increase risk of glaucoma, cataracts and other eye problem, (2) cause learn about neuropathy of foot, (3) lead to skin infections and other skin disorders, (4) cause ABCs of heart disease, (5) cause high blood pressure or known as hypertension and (6) lead to mental health (American Diabetes Association, 2009)

2.2 The statistics about diabetes

2.2.1 International Diabetes Statistics

Diabetes is close to our life than we expected. World Health Organization (WHO) reports that diabetes cause five per cent of death (around the world) each year.(WHO, 2008a). WHO estimates that more than 180 million people in our world have diabetes and this amount of diabetes will be double in year 2030. An estimate number of diabetes in year 2005 believes that 1.1 million people have died from diabetes type I. The statistics also shows that almost eighty per cent of people who die from diabetes live in low- to middle- income country. Looking at the age of death from diabetes, one will find that half of the death is age under 70 and fifty-five per cent of the death is women. WHO also forecast that without any urgent action, the diabetes death will increase by more than fifty per cent in the next ten years (WHO, 2008b).

The United Kingdom is one of the nations that have diabetes problem. The research by Diabetes UK stated that about four per cent of population age between 20 to 79 years old in UK has diabetes (Medscape Today, 2007)

According to American Diabetes Association (ADA) Data from the 2007 National Diabetes Fact Sheet, the American citizens are now suffering from diabetes. The data release in 2007 show that 23.6 million children and adults in the United States 7.8% of the population have diabetes. Diagnosed: 17.9 million people, Undiagnosed: 5.7 million people Pre-diabetes: 57 million people and 1.6 million new cases of diabetes are diagnosed in people aged 20 years and older each year. (American Diabetes Association, 2007)

Prevalence of Type 2 diabetes:16 million Americans (NWHIC, includes undiagnosed) 7.2million (actually diagnosed), Prevalence Rate: approx 1 in 17 or 5.88% or 16 million people in USA, Incidence (annual) of Type 2 diabetes: approximately 798,000 new cases of diabetes annually in USA, most are Type 2 diabetes(CDC-OC), Incidence Rate: approx 1 in 340 or 0.29% or 798,000 people in USA, Worldwide prevalence of Type 2 diabetes:150 million cases worldwide 2002 (Integrated Management of Cardiovascular Risk – Report of a WHO Meeting, 2002) Incidence of Type 2 diabetes: New cases diagnosed per year: 798,000. The following statistics relate to the prevalence of Type 2 diabetes 11.8% of African American women over 20; 1-in-4 African American women over 55 (NWHIC) 2,269 women per 100,000 population have type 2 diabetes in Australia 2001 and 2,942 non-English women per 100,000 population have type 2 diabetes in Australia 2001 (CureResearch, 2008b)

The estimated national prevalence of diabetes in Thai adults was 9.6% (2.4 million people), which included 4.8% previously diagnosed and 4.8% newly diagnosed. The prevalence of impaired fasting glucose was 5.4% (1.4 million people). Diagnosed diabetes, undiagnosed diabetes, and impaired fasting glucose were associated with greater age, BMI, waist-to-hip ratio, systolic blood pressure, total cholesterol, and serum creatinine levels. The majority of individuals with diagnosed diabetes had received dietary or other behavioral advice, and 82% were taking oral hypoglycemic therapy. Blood pressure-lowering therapy was provided to 67% of

diagnosed diabetic patients with concomitant hypertension. (American Diabetes Association, 2010b)

2.2.2 Thailand and Asia Diabetes Statistics

The United Nations stated that half of the numbers of people globally affected by diabetes are in India, China, Nepal and other Asian countries. The research as well stated that the number of Asia toward diabetes seems to continually increase annually. In 2003, there were 194 million Asians who developed and affected diabetic. In addition, the number of diabetes patients in Asia has reached 330 million in 2005 (Asian Diabetes Association, 2009a). The result additionally indicated that Asians are developing diabetes in younger age and lower weight which means that they suffer longer with complications and die earlier that developed countries. (Asian Diabetes Association, 2009b)

Diabetes Association of Thailand reported that diabetes can be found at the level of 3.5 per cent of people in all genders and ages but normally found in the elderly aged over 40. The research also showed that people who live in the city are most likely to develop diabetes than the people who live in the rural area. Moreover obese and the prolific mother are at risk to have diabetes (Diabetes Association of Thailand, 2007).

2.3 Diabetes Care and Prevention

Diabetes is one of the chronic diseases that considers as the global problem. Upon diagnose diabetes, it's not only effect the patient's life but it also affects the family of the patient. Moreover, diabetes is not only harmful to the body of the patients, but it also can lead to the mind and mental problem as well.

A recently concluded federally funded study of 3,234 people at high risk for diabetes, the Diabetes Prevention Program, showed that diet and exercise can sharply lower your risk of getting type 2. (CureResearch, 2008a) Suggestions made by American Diabetes Association (2009) were that diabetes patients should control the nutrition of what they eat. First diabetes should know what kind of food that can help

them control glucose level in their blood stream in order to make the best choice of each meal. The patient should start by beginning to read the label of nutrition fact that printed on the package. The nutrition fact will demonstrate the serving size and number of serving per container. This knowledge of nutrition fact will help diabetes select the proper meal and help avoid consuming the food that can stimulate diabetes. American Nurse Association (2009) also demonstrated the technique that can help diabetes diet better so called “Carbohydrate Counting” which is the techniques that will help reducing the glucose blood level since carbohydrate can rise glucose level in bloodstream. American nurse Association (2009) also gave the warning to the women who have or who are at the high risk of diagnosed diabetes by stating that these women will have a high risk of giving the diabetes to their children. According to the new ADA-funded study American Diabetes Association (2009), the number of pregnant woman with diabetes is double over a seven-year period.

Doctor Lalita Thidasiri who believed that the food that we consume each day can help us prevents and control diabetes. In her book “ไม่กินยาก็หายป่วย” (Recovery without medications), it evaluated that if people eat fresh fruit and vegetable while reducing or not consuming carbohydrate and fat, it will help reducing glucose in blood level without taking the medicine (Lalita Thidasiri,2000, Thai version).

India Herbs' Kaya Chikitsa doctors combine a proprietary herbal formula based on centuries' old wisdom with advice on diet, exercise, mental training, and relaxation to help individuals attain optimal blood chemistry and overcome health concerns through safe, natural means. (India Herbs-Ancient Remedies for Modern Times, 2010)

2.4 Diabetes Control Project (oversea)

Each year the world has spent a lot of money to reduce, prevent, protect, control and treat diabetes. There are so many diabetes projects running throughout the world.

Like many organizations that are willing to solve diabetes problem, ADA (2009) has aimed to help solving diabetes problem by stating that “Leading the fight to change the future of diabetes.” ADA has spent more than 170 million US dollars through many projects and researches on diabetes. Some of them included “Step out to fight diabetes program”, “American alert for diabetes” and, “Diabetes camps” and “Community campaign for diabetes”.

In additional, UK is another country that is alert about the threats of diabetes. UK has launched many projects against diabetes under different parties. “Diabetes UK” is one of the organizations in UK that aims to fight for diabetes. Diabetes UK has spent 32 Million GBP in 2008 on the diabetes program such as “Diabetes UK measure up road show.” The program included free diabetes testing and rise up the awareness of diabetes types.

2.5 Diabetes control project in Thailand

Like many countries, Thailand has created a number of projects to help preventing, controlling and reducing diabetes. For example, the project under the primary care unit innovation which aims to help people in Lampang to fight with diabetes. They are, for instance, “Study and competence development for diabetes mellitus and volunteers to monitor for self care behaviors in order to prevent diabetes on the local level” and “Treat diabetes without medicine”. Furthermore, there are other projects conducted both by public and private sectors to help solving the issues.

At Phanomphrai Hospital, due to its increasing trend of diabetes patients, the project named “Health promotion and prevention against diabetes – a complete cycle” has been initiated. The aim is to reduce incidence of and to improve the prevalence of diabetes type II. In so doing, the multidisciplinary program has been conducted with collaboration from medical and paramedic personnel at the hospital, by their physicians, nurses, pharmacists, nutritionists, exercising experts and health workers. (Phanomphrai Hospital, 2008).

2.5.1 Multidisciplinary program

Multidisciplinary program is the development of behavioral and learning objectives along with learning activities and methods of evaluation. The purposes of this program are: 1) to reduce the overlap in educational instructions given to patients with diabetes, and 2) to remove the problem of an unorganized patient education effort by placing such patients into a structured learning situation in which they feel comfortable and which is conducive to learning. According to Phanomphrai Hospital (2008), there are two main processes of multidisciplinary program. It begins with process of preparation. At the process of preparation, expertise and administration team are set up. They also have been trained and educated in term of how to successfully take care of diabetic patients. The process as well includes equipment and tools preparation. The next step is the process of implementation. This stage mainly consists of setting up the criteria for target respondents, taking care of target respondents and follow up.

The main expertise team is called “interdisciplinary team”, which are consisting of nurses, pharmacists, nutritionists, personnel health workers, and exercising experts. They are responsible for the multidisciplinary program. Due to the fact, that Phanomphrai only have 5 physicians, and tremendous amount of patients, it results in the imbalance between numbers of physician and patient. The diabetes patients will only get a chance to see the physician just in a severity case. There are five main responsibilities for the interdisciplinary team which are: (1) preparing places for a service at the Mahidol Pavilion for the DM patients to queue up for their next step (The special clinic starts at 5.30 due to the large number of patients), (2) preparing lab for blood testing, (3) checking the patient’s history, (4) processing patient’s information into the computer and (5) providing health education by Pharmacists, Nutritionists and Exercising Experts. The DM work process can be seen on the diagram below.

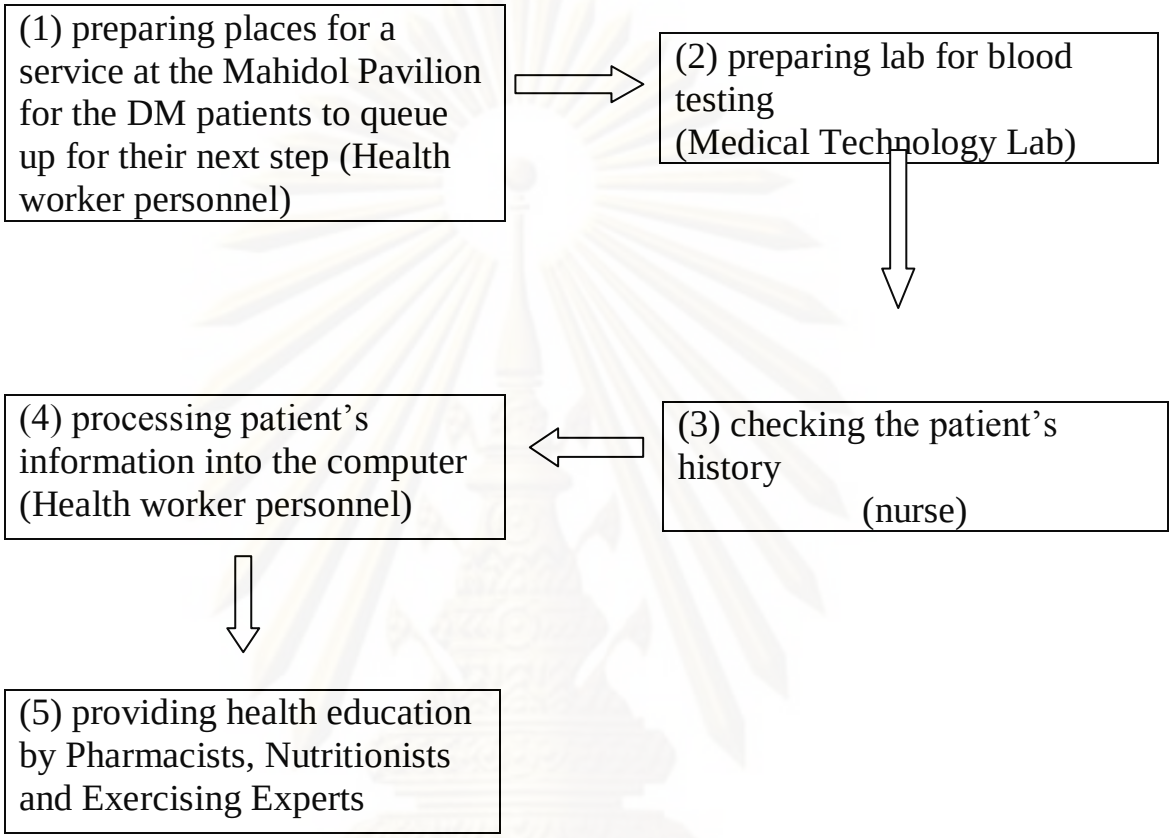

Figure 2: DM work process

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2.5.2 Health Care and Diabetes Prevention of Phanompharai Hospital

Health Care and Diabetes Prevention
Independent research for Phanomphrai Hospital,
Roi-ET Province, Thailand

Objectives for the research

1. To prevent the risky target group from Diabetes
2. To develop the health care and Diabetes prevention for Diabetes
3. To support the health care program for Diabetes patients

Assumptions for research

1. The number of Diabetes and risky target group will be reduced.
2. The improvement of the health care programs is activated.

Constraints

The number of risky target group and Diabetes patients is …….. people.

Health Care and Diabetes Prevention Program
Network of Phanomphrai-Nong Hi District year 2008

Objectives

1. To scan the number of new patients to apply for the Health Care and Diabetes Prevention program.
2. To set the standard for the Diabetes patients to take care themselves better by using the life cycle graph, sugar level in blood to control the complication.
3. To develop the format and criteria for the Health Care and Diabetes Prevention Program from a clinic to the district community.

4. To help the family members of Diabetes patients to participate in the change of patients' behaviors for the risk level of those people.

5. To create the support for the community to the Health Care and Diabetes Prevention Program.

Target

1. 40 years of age people who are scanned that they can be involved in the Diabetes.

2. The Diabetes patients that are cured by the clinics in community.

3. The leader of the community.

4. Development team for the Diabetes patients (PCT) for Phanomphrai Hospital 20 people.

- Officials from Phanomphrai community are 23 people
- Representatives from Phanomphrai community 20 people
- Volunteers from 19 villages, each village are 5 people total is 95 people.

Indicators

1. People who are 35 and over of age that are scanned 65%.
2. People who are scanned that they are in risk to be Diabetes and the people who have blood pressure >130-139/80-89 mmHg to get the necessary information for the programs 80%.
3. People who are scanned that they are looked after by the center 100 %.
4. The pregnant 100%.
5. People who participated in the programs of self-care activities 80%.
6. The percentage of understanding and knowledge for self-care activities in clinics is 80%.
7. The percentage of the patients that is examined in lab is 80%.
8. The percentage of the patients that is examined the mouth is 60%.
9. Re-admit percentage is down.

10. The number of people who are Diabetes patients is decreased.
11. Satisfaction level is more than 80%.
12. Diabetes patients are looked after completely by professional teams continually.
13. There is the supportive group of people that takes care of patients in community.
14. There are the leaders of the community in the areas in all villages. (In Phanomphrai District)
15. The expense of medication is increased not more than 10%.

Strategies

1. To develop the better and professional health care programs.
2. To develop the Diabetes patients by integrated team.
3. To emphasize the participation of patients, family, and community.
4. To develop the standard for the self care programs to help the patients understand easily.
5. To link the self care system with the complication of Diabetes patients.
6. To develop the community support network to scan, prevent, and cure the patients better.

Implementation

1. Process for preparation
2. Conference for the direction of campaign
3. Set up the team for integrated team from all PCU of each district.
4. To train the people for integrated subjects for community participation.
5. To establish the consultation and planning with teams to integrate.
6. To prepare for the modern materials for learning aids that is easily to remove.
7. To produce the individual recording book for each patient.
8. To set up the life cycle graph for the patients that can represent the sugar level.
9. To set up the administration system for all community.

2. Process for implementation

2.1 Scanning

1. To set up the plan for scanning.
2. Teaming implementation started.
3. To support the materials and medical instruments that can help indicate the level of sugar in blood for all districts.
4. To support the leaders in all districts to participate the program.
7. To set up the transmission of patients for all unit

2.2 Taking care (Major PCU hospitals)

1. The hospitals predict the number of patients in the area and prepare.
2. Scan the patients that are admitted.
3. To set up the life cycle graph for the patients that can represent the sugar level.
4. To set up the up the administration system for all patients and make a follow-up.
5. The hospitals need to expand the hour for the extra hours for hospitals every Tuesday, and Thursday (05.30am-08.30am).
6. Checking up for the complication 1 time a year.
7. Developing the direction and plan to help the patients in the hospital in clinics that cannot control the sugar level themselves. (Activity1-4)
8. Making the follow-up for all patients that do not continue the appointment and cooperate with the community officials to follow and take care at home.

9. To transmit the patients that not able to be cured for a complication.

10. To transmit the patients that not able to be cured to PCU and clinic by followings

11. Patients who are FBS < 180 mg % for 3 months.

12. Patients who are no complication.

13. Support the activities for the programs.

14. To merge the nutritious knowledge with the risky behaviors of Diabetes.

15. To support the academics for the officials and community as well as the family. Summarize for every 6 months.

2.3 Community participation

1. To separate the team for each part

2. Health center for community cooperates with the team.

3. Training for the human resources unit for the effective plan.

4. To manage the representatives for the people who will be taking care for the patients and family for 19 villages each district. (Details are attached)

5. Integration of team set up the activities for community for all district by applying the participative strategies to the patients. The program for Diabetes patients are based on 9 areas as follow.

5.1. To know the Diabetes

5.2. To understand food and nutrition for Diabetes

5.3. To understand diabetes control by medicines

5.4. To know how to exercise for reducing the stress

5.5. To gain community support

5.6. To develop permanent exhibition activities that are participated by communicating with people who have modern knowledge such as demonstration, communication, more.

5.7. To support the community supportive for self care activities in all districts.

5.8. To follow up the patients by integrative team for problematic patients.

5.9. To distribute the documents like brochures, leaflets, and Diabetes manual.

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CHAPTER III

METHODOLOGY

This chapter explains the method and tools used in this research it consists of thirteen sections which are: (1) research design, (2) study area, (3) study period, (4) study population and research participants, (5) sample size, (6) sampling technique, (7) Measurement Tools, (8) pre-Testing, (9) data collection, (10) data analysis, (11) ethical consideration, (12) Limitations and (13) expected benefits and application

3.1 Research Design

This study was a cross-sectional study design for both quantitative and qualitative (in-depth interview) to determine the factor associated with successful self-care behaviors of Diabetic patients Type II age between 18-85 through multidisciplinary program of Diabetes Mellitus Clinic at Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, Thailand.

The advantage of this technique allows researchers to control cost of operation and time when focusing on the large amount of population (Baker, 2003).

3.2 Study Area

This study was conducted in Diabetes Mellitus Clinic, Phanomphrai Hospital, Phanomphrai District, Roi-Et, Thailand, which is located in the northeast Thailand.

3.3 Study Period

The study period took place in March 2010 for approximately one week.

3.4 Study Population and Research Participants

The study population for the quantitative included the Diabetes Mellitus Type II patients between the age of 18 and 85 years old both sexes who joined the multidisciplinary program at Phanomphrai Hospital, Roi-Et, Thailand for at least 2-8 months. The study for the quantitative excluded the diabetes type I patients, diabetes type II patients who have complications, who are pregnant, who are from elsewhere than from Phanomphrai local residents (who might be visiting clinics as well), and who are not willing to participate in the current research.

The study population for the qualitative included the 20 interviewees who selected base on 4 groups (5 persons for each group): (1) nurse, (2) care taker, (3) successful self-care behavior patients and (4) unsuccessful self-care behavior patients.

To determine the influential factors of the Diabetes Mellitus Type II patients who join the multidisciplinary program to either turned out as the successful self care behaviors or as the unsuccessful self care behaviors.

3.5 Sample Size

To determine the appropriate sample size, the following equation was utilized (Daniel, 2005):

$n= Z^2pq/ d^2$

Where:

n=sample size

Z= standard value for 95% confidence interval= 1.96

d= acceptable error= 0.05

p= proportion of targeted population who have good self-care behavior = 50%= 0.5 (with the assumption of maximum variance)

q= 1- p= 1-0.5=0.5

$n= Z^2pq/ d^2$

$n= (1.96)^2 (0.5)(0.5)/ (0.05)^2= 384$

Sample size= 384 + 10 percent add-up = 423 or a round-up of 430 participants would be interviewed in case of any missing values or to account for cases of selective attrition.

3.6 Sampling Technique

The sampling technique in this study was purposive sampling of study site and a systematic random sampling at the study site. For the first 300 subjects, random sampling was used whereas for the rest (130 subjects) the technique of convenience sampling was used to collect data due to time and budget constraint.

The sampling technique in this study was a systematic random sampling at the study site. The systematic random sampling is a random sampling with run in a system. From the sampling frame, It begin with the random and therefore at regular intervals. In a random sample, every sample of the population has an equal chance of being selected. The advantage of this technique is: (1) to widen the sample more consistently over the population, (2) easier to conduct than a simple random sample (Neuman, 2000).

The target population for quantitative research was only focused on Diabetes Mellitus type II patients at Diabetes Mellitus Clinic, Phanomphrai Hospital, Phanomphrai District, Roi-Et, Thailand. These patients have joined the program since 2008, which has been provided in the statistics record in chapter 1. The target population for qualitative research (in-depth interview), were focused on 20 interviewees who selected base on 4 groups, 5 persons per each group: (1) nurse, (2) care taker, (3) successful self-care behavior patients and (4) unsuccessful self-care behavior patients. There were 4 sets of interview questions. The first set of interview questions was formulated to collect information from 5 nurses. The second set of interview questions aims to collect information from 5 care takers who involve with the program. The third set of interview

questions aims to find out information from 5 successful self-care behavior patients. The final set of interview questions were then collected from 5 unsuccessful self-care behavior patients. In order to gain enrich information, the criteria for selecting the target respondents were set as follow.

Respondents	Criteria
1. Nurse	- Should have a nurse practice certification. - Have been attended 5 days training toward diabetes care taker at diabetic association. - Have at least 1 year experience of taking care of diabetic patient.
2. Care taker	- Relative of the patient or care taker from hospital which normally look after 10 patients per one care taker. - Have at least 1 year experience of taking care of diabetic patient.
3. Successful self-care behavior patient	- HbA1C less than 7.0. - FBS level less than 140 mg/dl. - Do not have any complication.
4. Unsuccessful self-care behavior	- HbA1C more than 7.0. - FBS more than 200 mg/dl. - Have complications. - Have been suffering from diabetic for more than 20 years.

Each week on Tuesday and Thursday mornings (from 0530-0830 hours and from 0830-1200 hours), the DM Clinic at the hospital will be on service. The systematic random sampling method would be used from the patient list which is

made available evening of Monday and Wednesday so that face-to-face interview with the research participants could take place the following day during morning hours.

3.6.1 Inclusion criteria of the quantitative survey respondents/participants were (1) be between the ages of 18 and 85 years old, both male and female Diabetes Mellitus type II patients (2) have been in the multidisciplinary program for at least 2-8 months, and (3) volunteer to take part in the research and (4) nurses and care taker who were selected as a target respondents should have at least 1 year experience of taking care of diabetic patients. In addition, Inclusion criteria of the interviewees were four criteria of successful multidisciplinary program participants, namely, (1) blood sugar level < 140 mg/dl (2) less than 130/80 (Systolic/Diastolic) mmHg (3) HbA1C at 7.0 (4) low risks of complications at feet and eyes. For qualitative survey were focused on 20 interviewees who selected base on 4 groups 5 person per each group: (1) nurse, (2) care taker, (3) successful self-care behavior patients and (4) unsuccessful self-care behavior patients In order to gain enrich information, the criteria for selecting the target respondents were set as follow.

Respondents	**Criteria**
1. Nurse	- Should have a nurse practice certification. - Have been attended 5 days training toward diabetes care taker at diabetic association. - Have at least 1 year experience of taking care of diabetic patient.
2. Care taker	- Relative of the patient or care taker from hospital which normally look after 10 patients per one care taker. - Have at least 1 year experience of

	taking care of diabetic patient.
3. Successful self-care behavior patient	- HbA1C less than 7.0. - FBS level less than 140 mg/dl. - Do not have any complication.
4. Unsuccessful self-care behavior	- HbA1C more than 7.0. - FBS more than 200 mg/dl. - Have complications. - Have been suffering from diabetic for more than 20 years.

3.6.2 Exclusion Criteria of the quantitative respondents/participants were (1) those under the age of 18 or over the age of 70 Diabetes Mellitus Type II patients, (2) those who have been in the multidisciplinary program less than 2 months, (3) those DM type II who have complications (4) those DM type II who are pregnant, (5) Diabetes Mellitus Type I patients, (6) those who are officers from other area than Phanomphrai, and (7) those who refused to give informed consent. The study for qualitative excluded the

Nurse

- Do not have a nurse practice certification.
- Have not attended 5 days training toward diabetes care taker at diabetic association.
- Have less than 1 year experience of taking care of diabetic patient.
- Under the age of 25 or over the age 60 years old both sexes who is working for the multidisciplinary program at Phanomphrai Hospital, Roi-Et, Thailand.

Care taker

- Have less than 1 year experience of taking care of diabetic patient.
- Under the age of 25 or over the age 60 years old both sexes who is looking after the Diabetes Mellitus Type II who join the multidisciplinary program at Phanomphrai Hospital, Roi-Et, Thailand.

Successful self-care behavior patient

- HbA1C more than 7.0.
- FBS level more than 140 mg/dl.
- Have complications.
- Under the age of 18 or over 85 years old both sexes who joined the multidisciplinary program at Phanomphrai Hospital, Roi-Et, Thailand for less than 2-8 months.

Unsuccessful self-care behavior

- HbA1C less than 7.0.
- FBS less than 200 mg/dl.
- Do not have complications.
- Have been suffering from diabetic for less than 20 years.
- Under the age of 18 or over 85 years old both sexes who joined the multidisciplinary program at Phanomphrai Hospital, Roi-Et, Thailand for less than 2-8 months.

There were approximately 10 nurses who are looking after this program but due to time constraint and loads of duty of nurses at Diabetes Mellitus Clinic at Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, Thailand, only 5 were available.

There were approximately 2,500 care takers but only 5 were chosen because of time and budget constraints.

There were approximately more than 1,500 Successful self-care behavior patients but only 5 patients were selected because of time and budget constraints.

There were approximately more than 1,200 Unsuccessful self-care behavior patients but only 5 patients were picked because of time and budget constraints.

3.7 Measurement Tools

Questionnaires with face-to-face interview for quantitative and qualitative that measured both the aforementioned independent and dependent variables.

3.8 Pre-Testing

In order to ensure the reliability of questionnaire, the pre-test of questionnaire would be conducted in the Community Hospital in Northeast province. It is then assumed that the local culture would be similar. The pre-test of questionnaire would be 30 sets. Kuder-Richardson was employed to test the reliability of questionnaire in knowledge section while in the attitude and practice sections were tested by Cronbach Alpha. Cronbach Alpha determines the internal consistency or average correlation of factors in a questionnaire would be used to measure its reliability.

The reliability formula:

$$\alpha = \frac{k}{k-1}\left\{1 - \frac{\sum S^2 i}{S^2 x}\right\}$$ (Cronbach, 1990:204)

Where

K = the number of questions in the questionnaire

S^2i = the variance of marks in each item of the questionnaire

S^2x = the variance of marks in the questionnaire

The 30 pre-test questionnaires were then computed in to the Statistic Package for the Social Science Version 17 (SPSS software) to make certain that questionnaire is reliable, understandable and can be used to collect the information for this research. According to Bryman and Cramer (2005) the acceptable rate of reliability which tests by using Cronbach Alpha should be 0.8 or more, Four hundred and thirty questionnaires would be distributed for actual data collection to the target respondents in the next step. Knowledge contains 27 items have Cronbach alpha = 0.73. Moreover, to measuring Attitude contains 27 items have Cronbach alpha = 0.704 and Practice level contains 20 items have Cronbach alpha = 0.768

3.9 Data Collection

This study employed the in-depth interview (qualitative) and questionnaire (quantitative) by a face-to-face interview with participants by the researcher and twenty research assistants to collect data in Thai language. The researcher would thoroughly explain the objective of the research, the components of the questionnaire and the technique that the research assistants are expected to employ while face-to-face interview with the questionnaire. All respondents would be asked to sign a consent form stating that they understand the purpose of the research and are willingly agree to be a part of this study. They would then be in face-to-face interview. If any questions arose during the interview, researcher assistants were instructed to answer the respondent's question to the best of their ability, however if a question arose would be beyond the scope of knowledge of the research assistants, then the research assistants were instructed to contact the researcher immediately to resolve any uncertainties to ensure that there would be no confusion.

Moreover, in the case of emergency and unexpected issues such as patients unconscious, patients cannot breathe properly, research assistants need to contact

researcher instantaneously in order to avoid the serious injure and need to have a training to avoid any confusion**.**

Each research assistant was given a checklist of items that were to be completed by the respondent's reply. The research assistant would be responsible for checking off each item completed after each interview. In addition, each interview was assigned a number that corresponded to each respective research assistant. In the event that there was some missing data, the research assistant was responsible for tracking the same respondent down and obtaining the missing data.

The questionnaire was separated into 4 parts. The first part aims to gather personal information such as age, gender, education level, marital status, religion, work status, duration of diabetes mellitus, blood sugar level check, and complication at feet and eyes. In term of complication at feet and eyes, researcher applied the feet and eyes assessment for diabetic patient which can be seen in the appendices. The second part aims to measure the knowledge of self care behaviours learnt from multidisciplinary program (diet control, exercising, diabetes drug taking, and self-health care), while the third part deals with the attitudes, and ended with the practice of self-care behaviours of the patients at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

For the in-depth interview, the target respondents for interview were focused on 20 interviewees who selected base on 4 groups: (1) nurse, (2) care taker, (3) successful self-care behavior patients and (4) unsuccessful self-care behavior patients. There were 4 set of interview questions. The first set of interview questions was formulated to collect information from 5 nurses. The second set of interview questions aims to collect information from 5 care takers who involve with the program. The third set of interview question aims to find out information from 5 successful self-care behavior patients. The final set of interview question was then collected from 5 unsuccessful self-care behavior patients.

For the scoring part, it was planned as follows:

1. Knowledge: the scoring method

Right answer : 1 point

Wrong answer : 0 point

Do not know : 0 point

And vice versa for negative statement.

The obtained score were then converted in terms of score level and were classified into 3 levels as follows:

Low knowledge : 0-19 points

Medium knowledge : 20-29 points

High knowledge : 30-38 points

Possible scores were ranged between 0-38 points. A mean score and standard deviation of the group were used to classify subjects into 3 groups as follow: (Srisaard, 1992; Suchat, 1997)

Good level : scores > Mean + S.D.

Moderate level : scores = Mean ± S.D.

Low level : score < Mean - S.D.

2. Attitude: the scoring method

Agree answer : 3 points

Not certain answer : 2 points

Disagree answer : 1 point

And vice versa for negative statement.

The obtained score were then converted in terms of score level and were classified into 3 levels as follows:

Low attitudes : 20-39 points

Medium attitudes : 40-49 points

High attitudes : 50-60 points

Possible scores were ranged between 0-38 points. A mean score and standard deviation of the group were used to classify subjects into 3 groups as follow: (Srisaard,1992 ; Suchat,1997)

Good level : scores > Mean + S.D.

Moderate level : scores = Mean ± S.D.

Low level : score < Mean - S.D.

3. Practice: the scoring method

Always/often : 3 point

Occasionally : 2 point

Rarely/never : 1 point

And vice versa for negative statement.

The obtained score were then converted in terms of score level and were classified into 3 levels as follows:

Rarely/never : 1-35 points

Occasionally : 36-52 points

Always/often : 53-69 points

Possible scores were ranged between 0-38 points. A mean score and standard deviation of the group were used to classify subjects into 3 groups as follow: (Srisaard, 1992; Suchat, 1997)

Good level : scores > Mean + S.D.

Moderate level : scores = Mean ± S.D.

Low level : score < Mean - S.D.

The grading system used by Chaturawit (Chaturawit, C. Development of Educational Tool model for self-help meal planning in type I diabetic adolescent : carbohydrate counting concept. Master's Thesis, Department of Public Health Faculty of Graduate Studies Mahidol University, 2005.) In a similar study and it was found to be reliable.

3.10 Data Analysis

Statistical package was used for quantitative data analysis. Descriptive statistics: frequency, percentage, mean, standard deviation, median and range were calculated for the socio-demographic characteristics, knowledge, attitudes, and practice level. Inferential statistics: the relationship between independent and dependent variables was presented by Correlation and Chi-square at the p-value of < 0.05.

3.11 Ethical Consideration

Prior to conducting any research that involves human subjects, approval from the Ethical Review Committee of Chulalongkorn University must be obtained to ensure that the study does not knowingly present any danger to participants nor does it violate any of their rights.

Furthermore, before face-to-face interview questionnaire, the research assistants would be instructed to give clear and concise instructions about the purpose of the study. In addition, all potential participants are informed that participation is completely voluntary and they can withdraw from the study at any time, which will not have any adverse effects on them or the subsequent care they receive. To confirm

that they understand, willing participants are asked to sign a consent form for their acknowledgement.

3.12 Limitations

Since this research would collect information based on the sample size of 430, the result of the research cannot represent the whole Diabetes Mellitus type II patients in Thailand.

Being a cross-sectional study, the time constraint might not permit researchers to conduct other type of data collection, ie qualitative research, community research, and more direct observation.

The DM type II patients who live in the remote area will not be available to come to the hospital due to time and budget constraints.

The ageing DM Type II patient who were selected by random sampling technique, were not able to give much information to the researcher due to time constraint and ageing (can't recognize properly).

There is no patient under the age of 43 years old, due to the process of screening by the government in a particular area, which is overlapping each other. Therefore the majority of patients who has another appointment would not be able to turn up to this. Thus, we have an average age of 51 years old patients.

3.13 Expected Benefits and Application

The expected outcomes of the study are, for instance, to learn the factors that impact the success of compliance with the principles of multidisciplinary program from the hospital. The key objective is to inform the executive board of the hospital of such key success factor (s) to improve their program accordingly. Ultimately, a suitable program for improving self-care behaviors in diabetes patients can be developed.

CHAPTER IV

RESULTS

According to the research of "Knowledge, Attitudes, and Practice (KAP) of Diabetes Mellitus Type II Patients in Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, Thailand", the research has been studying on 430 patients who have diabetes classified as Diabetes Mellitus Type II. By using the questionnaires and structured interview as research methods, the information and data collected have thus been evaluated in term of statistics which can be divided into 6 parts as follows.

Part I: Personal background of diabetes mellitus type II patients who have participated in "Self-Care Program" organized by Diabetes Mellitus Clinic at Phanomphrai Hospital

Part II: Patient Record of diabetes mellitus type II patients who have participated in "Self-Care Program" organized by Diabetes Mellitus Clinic at Phanomphrai Hospital

Part III: Level of knowledge, attitudes, and practice (KAP) of diabetes mellitus type II patients who have participated in "Self-Care Program" organized by Diabetes Mellitus Clinic at Phanomphrai Hospital

Part IV: Summary of Nurses' Interview

Part V: Summary of Care Takers' Interview

Part VI: Summary of Successful Self-Care Patients' Interview

Part VII: Summary of Unsuccessful Self-Care Patients' Interview

Part VIII: Test Results of Research Questions

Part I: Personal background of diabetes mellitus type II patients who have participated in "Self-Care Program" organized by Diabetes Mellitus Clinic at Phanomphrai Hospital

Table 1: Personal Background of Patients

Patients' Characteristics	**Number of Patients**	**Percentage (%)**
1. Gender		
- Male	125	29.1
- Female	305	70.9
Total	430	100
2. Religion		
- Buddhism	430	100
Total	430	100
3. Educational Level		
- Below Elementary Education	332	77.2
- Elementary School (Grade 6)	50	11.6
- Secondary School	21	4.9
- High School or Equivalent	22	5.1
- Undergraduate or Equivalent	0	0
- Master Degree or Equivalent	0	0
- Non-Specific	5	1.2
Total	430	100

Table 1: Personal Background of Patients (continued)

Patients' Characteristics	Number of Patients	Percentage (%)
4. Age		
- 43 - 52	48	11.2
- 53 – 62	18	4.2
- 63 – 72	14	3.3
- 73 – 82	350	81.4
Mean = 51.93, Min *= 13, Max*= 82		
Total	430	100
5. Status		
- Married	343	79.8
- Single	22	5.1
- Divorced	9	2.1
- Widowed	56	13
Total	430	100
6. Occupation		
- Permanent Job	83	19.30
- Temporary Job	34	7.91
- Retirement	17	3.95
- Unemployed	190	44.19
- Housewife	56	13.02
- Others	38	8.84
- Non-Specific	12	2.79
Total	430	100

*Min = Minimum,*Max=Maximum

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Table 1: Personal Background of Patients (continued)

Patients' Characteristics	Number of Patients	Percentage (%)
7. Fields of Work		
- Agriculture	181	42.1
- Employment	67	15.6
- Pupil / Student	0	0
- Government Officer	9	2.1
- Others	0	0
- Non-Specific	116	27.0
Total	430	100

According to the personal background of diabetes mellitus type II patients shown in Table 1, majority of patients were females approximately 305 people or 70.9% of total patients interviewed while the number of male patients were 125 people or 29.1% of total number of interviewed patients. There are 430 patients, all are Buddhists, in which most of them have graduated below elementary education level with the amount of 332 people or 77.2%, followed by 50 patients or 11.6% have graduated the elementary school (Grade 6), followed by 21 patients or 4.9% have graduated the Secondary School, followed by 22 patients or 5.1% have graduated the High School or equivalent. There are 5 patients or 1.2 % which can not be specified and no patients who held a bachelor's degree or equivalent. The youngest patient is 43 years old, while the oldest one is 82 years old, in which the Mean is equal to 51.92 years old and the SD is 13 years. Most of the patients are in the age group of 73 – 82 year old and made up of 350 people or 81.4 %

With the marital status 79.8 %, or 343 patients are married, 5.1 % or 22 patients are single, 2.1 % or 9 patients are divorced and 13 % or 56 patients are widowed. Type of patients occupation who work full time were 71 patients or 16.5% , patients who temporarily were 8 patients or 1.9 %, Retirement were 4 patients or

0.9%, For unemployment were 163 patients or 37.9 %. Patients who identify as other were 138 patients or 32.1% and patients who cannot identify the job themselves of 5 patients or 1.2%. In terms of identifying the fields of work, the result found that the patients are mostly working in the field of Agriculture and that made up to 42.1 % or 181 patients, for employment 15.6 % or 67 patients. Follow by 2.1% or 9 patients are government officers, and 27% or 116 patients cannot identify their fields of work. This is no indication as students or other fields of work.

Table 2: Personal Lifestyle of Patients

Personal Lifestyle	**Number of Patients**	**Percentage (%)**
Frequency of Blood Sugar Test		
- Every 2 weeks	15	3.5
- Once a Month	149	34.7
- Every 3 Months	236	54.9
- Every 6 Months	17	4.0
- Non-Specific	13	3
Total	430	100

Table 2 shows the personal lifestyle of diabetes mellitus type II patients, in which the study has found that the patients 15 people or 3.5% have blood sugar test every two weeks, followed by the number of patients 149 people or 34.7% have blood sugar test once a month, most patients 236 people or 54.9% have blood sugar test every three months, followed by 17 patients or 4% have blood sugar test every 6 months, and 13 patients or 3% of total patients interviewed are unable to specify their frequency of blood sugar test.

Table 3: Median and SD. of Patients' Personal Background

General Background	Minimum	Maximum	Median
Household Income	200	20,000	1,000
Household Expense	60	15,000	1,500
Duration of Diabetes Suffering	1	35	7

In Table 3, the information on personal background of diabetes mellitus type II patients according to Median is found as follows.

1. The minimum average revenue of patient's family is 200 baht per month, while the maximum revenue is 20,000 baht per month, in which Median is equal to 1,000 baht.

2. The minimum average household expense of patients is 60 baht per month, while the maximum expense is 15,000 baht per month, in which Median is equal to 1,500 baht.

3. The minimum period for patients who are suffering from the diabetes mellitus type II is 1 year while the maximum period is approximately 35 years, in which Median is equal to 7 years.

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Part II: Patient Record of diabetes mellitus type II patients who have participated in "Self-Care Program" organized by Diabetes Mellitus Clinic at Phanomphrai Hospital

Table 4: Patients' Record

Patients' Record	**Number of Patients**	**Percentage (%)**
1. Blood Sugar Level		
- Passed	305	70.9
- Failed	125	29.1
Total	430	100.0
2. HbAlc Level		
- Passed	302	70.2
- Failed	128	29.8
Total	430	100.0
3. Blood Pressure Level		
- Passed	302	70.2
- Failed	128	29.8
Total	430	100.0
4. Eyes Assessment		
- Passed	390	90.7
- Failed	40	9.3
Total	430	100.0
5. Foot Assessment		
- Passed	302	70.2
- Failed	128	29.8
Total	430	100.0

In Table 4, the figures show the history of patients' record based on the tests according to these following five criteria:

1. Blood Sugar Level : There are 305 patients or 70.9% of total patients who passed the test.
2. HbAlc Level : There are 302 patients or 70.2% of total patients who passed the test.
3. Blood Pressure Level : There are 302 patients or 70.2% of total patients who passed the test.
4. Eyes Assessment : There are 390 patients or 90.7% of total patients who passed the test.
5. Foot Assessment : There are 302 patients or 70.2% of total patients who passed the test.

Part III: Level of knowledge, attitudes, and practice (KAP) of diabetes mellitus type II patients who have participated in "Self-Care Program" organized by Diabetes Mellitus Clinic at Phanomphrai Hospital

Table 5: Knowledge Level of Diabetes Mellitus Type II Patients

Level of Knowledge	**Scores**	**Number of**	
		Patients	**Percentage (%)**
Low	0 – 19 scores	178	43.5
Moderate	20 – 29 scores	140	34.2
High	30 – 38 scores	91	22.2
Total		409	100

***(Jariya, W., 2006)

The scores of knowledge of diabetes type 2 patients have the lowest score 9 points, maximum 38 points. Based on Table 4.5, the level of self-care knowledge

found among diabetes mellitus type II patients can be divided into 3 levels, in which 178 patients or 43.5% of all patients have self-care knowledge at low level, 140 patients or 34.2% all patients have moderate level of self-care knowledge, and another 91 patients or 22.2% of total diabetes mellitus type II patients have their self-care knowledge at high level.

Table 6: Attitudes Level of Diabetes Mellitus Type II Patients

Level of Attitudes	**Scores**	**Number of**	
		Patients	**Percentage (%)**
Low	20 – 39 scores	16	3.8
Moderate	40 – 49 scores	288	68.2
High	50 – 60 scores	118	28.0
Total		422	100

*** (Jariya, W., 2006)

The scores of attitude of diabetes type 2 patients have the lowest score 38 points, maximum 59 points. According to Table 6, the study has found that the attitude level relating to self-care of diabetes mellitus type II patients can be divided into 3 levels, in which 16 patients or 3.8% of total patients interviewed have their attitudes about self-care at low level, 288 patients or 68.2% of all diabetes mellitus type II patients have moderate attitudes on self-care, and another 118 patients or approximately 28% of total patients have their attitude relating to self-care at high level.

Table 7: Self-Practice Level of Diabetes Mellitus Type II Patients

Level of Self-Practice	Scores	Number of	
		Patients	Percentage (%)
Never (not good)	1 – 35 scores	3	0.7
Sometimes (moderate)	36 – 52 scores	173	41.1
Always (very good)	53 – 69 scores	245	58.2
Total		421	100

***(Jariya, W., 2006)

The scores of Self-Practice Level of Diabetes Mellitus Type II Patients have the lowest score of 35 points, and the maximum of 66 points. For the information indicated in Table 7, the level of self-practice found in the group of diabetes mellitus type II patients can be divided into 3 levels, in which 3 patients or 0.7% of total patients never practice themselves properly which mean this group does not take care of themselves properly (not good self care behaviors patients) , 173 patients or approximately 34.2% of total patients practice themselves occasionally which mean this group take care of themselves moderately (moderate self care behaviors) , and the number of 245 patients or 58.2% of patients practice themselves regularly which mean this group of patients take care themselves very good.(very good self care behaviors) .

Table 8: Mean and SD. of Knowledge, Attitude and Self-Practice

KAP	Mean	SD.	Scores Level
Knowledge Level	22.38	7.79	Moderate
Attitude Level	47.55	4.65	Moderate
Self-Practice Level	53.88	5.80	Always

In Table 8, the study has found that the level of knowledge is moderately average at 22.38 out of 38 which mean that the Diabetes Mellitus Type II patients have a moderate knowledge about Diabetes. According to their attitude, it appeared to be at moderate level with its mean at 47.55 out of 60, while the self-practice level is relatively high with the mean at 53.88 out of 69 which means that the Diabetes Mellitus Type II patients have a very good self care behavior.

Table 9: Knowledge level divide by Self-Practice Level of Diabetes Mellitus Type II Patients

Knowledge	**Self-Practice**						**Total**	
	Never		**Sometimes**		**Always**			
	Patients	**%**	**Patients**	**%**	**Patients**	**%**	**Patients**	**%**
Low	0	0.00	111	63.79	63	36.20	174	100.00
Medium	3	2.18	40	29.19	94	68.61	137	100.00
High	0	0.00	12	13.48	77	86.51	89	100.00

Table 9 shows the knowledge level of patients by their level Self-Practice Level of Diabetes Mellitus Type II Patients, which has found that patients in high knowledge level and always perform self-practice is 77 patients, in the average level of knowledge and always perform self-practice is 94 patients, in low level of knowledge and always perform self-practice is 63. In the group's patients who perform self-care sometimes and high knowledge level is 12 patients or and had knowledge of the average level is 40 patients, patients has the knowledge of low level is 111 patients or in this study found that have only 3 patients have average level of knowledge and not perform any self-practice.

Table 10: Attitude level divide by Self-Practice Level of Diabetes Mellitus Type II Patients

Attitude	Self-Practice						Total	
	Never		Sometimes		Always			
	Patients	%	Patients	%	Patients	%	Patients	%
Low	0	0.00	7	43.75	9	56.25	16	100.00
Medium	3	1.06	152	54.09	126	44.83	281	100.00
High	0	0.00	11	9.48	105	90.51	116	100.00

Table 10 shows the attitude level of patients by their level Self-Practice Level of Diabetes Mellitus Type II Patients, which has found that patients in high attitude level and always perform self-practice is 105 patients, in the average level of attitude and always perform self-practice is 126 patients, in low level of attitude and always perform self-practice is 9. In the group's patients who perform self-care sometimes and high attitude level is 11 patients and had attitude of the average level is 152 patients, patients has the attitude of low level is 7 patients in this study found that have only 3 patients have average level of attitude and not perform any self-practice.

Part IV: Summary of Nurses' Interview

The result of an interview conduct is relatively based on the nurses who take charge of Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province. Furthermore, the information from the experiences of these nurses would be beneficial to the discussion and research analysis of the studies of Self-Care Program at Diabetes Mellitus Clinic in other province rather than Bangkok. Also, regarding information relating to interviews with nurses responsible for Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, the main topics can be summarized as follows.

1. What are the processes and key objectives of Self-Care Program?

The Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province have its principles to provide knowledge regarding self-adjusted behavior given especially for the diabetes mellitus type II patients. As a result, the Diabetes Mellitus type II patients would understand the nature of the illness and also they can control level of blood sugar better than normal practice by themselves. In addition, the program aims to help the diabetes mellitus type II patients in living with diabetes happily by practicing themselves to control their own level of blood sugar as their normal routine behaviors. Moreover, it is significant that the Diabetes Mellitus type II patients need to get the ideas of what they are facing and lead to an understanding of the process to deal with the illness. In addition to this, the attitude towards the Diabetes Mellitus type II is also considered as the primary considerations for the patients. As the mental condition highly affected the physical condition of the patients in general, the correct information about Diabetes Mellitus type II is the first thing to give to the patients. Thus, the Diabetes Mellitus type II patients could at least better get the ideas of what Diabetes Mellitus type II is and how to manage the disease onwards.

2. What are the obstacles found against the program's achievement?

This can be divided into 2 aspects as following:

The patients who live in the far distance locations are inconvenient patients to travel to the hospital for medical care. As this is the controllable limitation for the program, the Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province would have a support of the transportations with the expenses and further facilities for the patients in the future. By this, the opportunity to have the development is possible.

The inadequate of human resources and equipment is the second aspect of the obstacles. The Science Ministry of Thailand would need to supply Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province as the necessary facilities that the government sector should take charge of. It is crucial that the Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et

Province is the major hospital of the Roi-Et Province to look after the critical cases of disease. Moreover, the people who cannot understand the theories of the disease and the Diabetes Mellitus type II. These group of people need to be provided by the equipment that can present them the details about the Diabetes Mellitus type II for them as a physical evidence. Therefore, they would feel more involved in the process of the disease and be aware more of the solutions to the illness.

3. What are the factors which contribute to success for the program? How many patients who want to participate in this program?

It is crucial that the factors which contribute to success for the program are the patients and care takers in collaboration with the project are the keys of whether the program will be successful or not. The care takers of the Diabetes Mellitus type II patients need to have the correct knowledge and information to look after the patients and also feed the information to the patients as well. By the way, the Diabetes Mellitus type II patients would understand the facts and have a good attitude towards the disease and the way to get better. There are plenty numbers of people that the government would scan and check up for the participation of the program. Every people who is checked and found that they got the Diabetes Mellitus type II disease would be joining this self-care program. Therefore, the number of patients could not measure as a specific figure. Also, there are some groups of people who got the participation and left before the end of the program, which is considered as the limitations for the program arrangement and success of the goals.

In other words, the patients can have happier living condition with Diabetes Mellitus type II disease. This affects to other patients who are interested in the participating of the program. By this, the patients and general people who are interested in the program and Diabetes Mellitus type II disease knowledge would be the one to have a word-of-mouth for the further program in the future. In addition to this, joining this self-care program is considered as the beginning phase of the program to lead people to understand the fundamental details of the whole program and have the outline and schedule of the self-care program.

However, the program is primarily appropriate for the people who are Diabetes Mellitus type II disease patients and people who are interested in studying of this disease. The Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province is the primary point to help people in Phanomphrai District, Roi-Et Province be aware more in eating and being healthier in the future.

4. What are the factors which caused this program unsuccessful?

The factors that caused the program to be unsuccessful are basically because the patients do not have care takers to look after them and the other reason is because they live in the remote areas. This forces them to leave the Clinic earlier than the end of session held for this program. By the way, this obstacle caused the high expenditure amount of the program's budget allocation. Therefore, the self-care programs for the people who are going to take would need to scan and have the term of agreement with the patients for the contract in long term. Otherwise, the government and the representatives of the self-care program would waste their time and expenses for the unsuccessful program with some group of patients. In addition, the patients who come from the remote areas would find it very difficult to go to Phanomphrai Hospital, Phanomphrai District, Roi-Et Province. As a result, they cannot come at the appointing date and time that they need to go for the follow up. This caused the unsuccessful process of the self-care program which is necessary for the Diabetes Mellitus type II disease patients.

5. Are there enough resources provided by Phanomprai hospital, such as, doctors, nurses, and important medical equipments to support patients for this program?

The resources provided by Phanomprai hospital are inadequate according to the demand of patients, especially, human resource. There are less number of people in comparison to the proportion of the Diabetes Mellitus type II disease patients at Phanomprai hospital. Therefore, the problem of lack of doctors, nurses, and important medical equipments for the patients is concerned. Furthermore, it is significant that

the expertise people especially for the Diabetes Mellitus type II disease is not enough. In addition, there are many people who go for the check up and found that they are the Diabetes Mellitus type II disease patients. Hence, the number of Diabetes Mellitus type II disease is increasingly changed. As a result, the human resource is not enough. The government should take this problem into considerations. They should supply the more numbers of doctor and nurse, who are an expertise in Diabetes Mellitus type II disease and importantly medical equipment. Further, the volunteer university students who are willing to take part are also welcomed for the more patients. It is such a great opportunity for the university students to learn by direct experiences to study with the real case.

6. What are the main factors that attract patients to participate in the program?

It is fortunate that the patients are likely to realize more that the importance of self-care program can help them get better and they would attend the activities afterwards. Additionally, they follow the advices by the doctors, nurses, and particular advisors for Diabetes Mellitus type II disease patients at Phanomprai hospital in the proper way. With the help of the advice of the Diabetes Mellitus type II disease doctor about the post-effects and side-effects of Diabetes Mellitus type II disease, the patients are more aware and come to request for the suggestions and recommendations for their eating habits and ingredients of meals. By the way, the more number of Diabetes Mellitus type II disease patients come to attend the activities that we held occasionally. Afterwards, they would become the members of the self-care activities of Diabetes Mellitus type II disease program.

7. What are the key successful factors that attract patients to join this program?

- Self-practice strictly follow the instructions of the doctor.

-Distance between house and hospital.

-Work condition in which patients have to work in different areas.

-No personal care takers.

The above points are the key factors to consider for the patients' constraint of the decision process of participation of the program. These are the fundamental limitations of the decision of Phanomphrai District, Roi-Et Province people.

8. What are the approaches or techniques that can recall any patients who were dissatisfied with the program to re-participate the program once again?

The local unit of Phanomprai hospital Phanomphrai District, Roi-Et Province would establish more involvement to the Diabetes Mellitus type II disease patients as an approachable communication in order to closely cure the patients who are living in the villages or create good activities for patients to participate in the program. Moreover, the relationship management techniques are significant for the recall of the people to reconsider the good program for themselves. As it is for the patient's benefits, the two-way communication execution for the people who live nearby and in Phanomphrai District, Roi-Et Province. The information distribution is the first phase to support for the uneducated people in the area. By the way, the communication techniques with the communicative and cooperative people are necessary for the successful program and the further programs. Further, to examine whether the patients who were dissatisfied with the program for which reasons and this needs to take time and learn by case.

9. How to motivate patients to strictly follow the program's requirements?

The strategy is to talk with the patients and convince them by giving the examples of those who do not strictly follow the advices. As the ultimate goal for all stakeholders is to help the Diabetes Mellitus type II disease patients get better from the disease, it is important to give the requirements and contract for them. Otherwise,

it would become as it was that the patients left the program and did not attend the appointment as it was.

10. What is the development or improvement of patients after joining the program?

From the experiences of taking care for the Diabetes Mellitus type II disease patients, there are the clarified improvements or developments that are followings;

-Patients are careful with food consumption behavior.

-Patients are doing exercise regularly.

11. What are the qualifications required for nurses responsible for this program?

-The participated nurses would have more patience in providing the knowledge to patients. As the patients in the location are non-literary and uneducated, the nurses responsible for this program would need to have a teaching-minded and patience as well for the successful goals.

-The participated nurses would not expect too much from the patients because that will disappoint them at the beginning. In general, the nurses who are responsible to work with the people in this area would need to understand them first and decide whether they can accept the nature and behaviors of these group of Diabetes Mellitus type II disease patients or not before coming to attend the program.

Part V: Summary of Care Takers' Interview

According to the interview with care takers who are working for Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, the main topics can be summarized as follows.

1. What are the processes and key objectives of Self-Care Program?

The program has its principles to provide knowledge regarding self-adjusted behavior given the diabetes mellitus type II patients. As the result, the patients can control level of blood sugar better than normal practice. In addition, the program aims to provide knowledge for patients' self-practices.

2. Obstacles which prevent the program's achievement ?

Patients are very far away from caretakers' building. They travel to the hospital with difficulty.

3. What are the obstacles found against the program's achievement?

Patients are staying far from care takers' building. They travel to receive medical care with difficulty.

4. What are the factors which contribute to success for the program?

Patients cooperate with this program very well at all time.

5. What are the factors which caused this program unsuccessful?

Patients live in the remote areas away from hospital. There are no transportations for traveling to the hospital.

6. Are there enough resources provided by Phanomprai hospital, such as, doctors, nurses, and important medical equipments to support patients for this program?

The resources provided by Phanomprai hospital are inadequate, both human resource and medical equipments.

7. What are the main factors that attract patients to participate in the program?

Patients realize the importance of the program and attend the activities held regularly, including following the advices strictly.

8. What are the key successful factors that attract patients to join this program?

-Distance between house and care takers' building

-Work condition in which patients have to work in different areas

9. What is the best way to suggest the patients to control their level of blood sugar?

Patients have to control food, sweet food, and oily food.

10. Are there any complications found in diabetic patients?

-Lung disease

-Kidney disease

-Blood pressure

11. What should be improved and developed in this program?

-The number of human resources should be increased according to demand of patients

- The amount of medical equipments required should be increased, so that the patients won't have to wait for a long time.

12. What are qualifications required for staff who work in this program?

-The program staff shall have patience in taking care of patients.

-The program staff shall have the excellent knowledge of diabetes.

Part VI: Summary of Successful Self-Care Patients' Interview

According to the interview with Successful Self-Care Patients who are attend Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province; the main topics can be summarized as follows.

1. What made the successful self-care patients realize that they have diabetes?

They were fatigue and drank lots of water more than usual. So they went to see the doctor.

2. What do the successful self-care patients expect from joining of this program?

They expect no complication diseases, fatigue symptom, and faint.

3. Do the successful self-care patients feel that the program has fulfilled their expectation once joining the Self-Care Program for diabetic patients? What are benefits that the successful self-care patients receive from this program?

The program partially fits the expectation, such as, learning of medical knowledge and attending in the useful activities.

4. What do the successful self-care patients think about the knowledge and information provided by the program? Are such knowledge and information useful and easily understandable?

The knowledge provided is useful but consists of difficult vocabularies which are difficult to understand.

5. What is the best way to mitigate diabetic symptoms in the opinion of successful self-care patients?

Control of food and doing exercise as routine

6. Have the behaviors and diabetic symptoms of successful self-care patients changed or improved after joining of this program?

The successful self-care patients feel obviously healthier because they are not tired easily. Additionally, they know what kind of sport suits themselves.

7. What should be improved in Self-Care Program according to the opinion of successful self-care patients?

The number of human resource should be increased in accordance with the number of patients.

The amount of medical equipments should be increased, therefore, the patients do not have to wait so long.

8. What are the motivation factors that make the successful self-care patients strictly follow the advices of the Self-Care Program?

The good care provided patiently and politely by nurses, including the encouragement receiving from other people.

9. Will the successful self-care patients suggest this program to other people or not? And Why?

They will definitely suggest this program to other diabetic patients because they feel better after joining the program.

Part VII: Summary of Unsuccessful Self-Care Patients' Interview

According to the interview with Unsuccessful Self-Care Patients who are attend Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province; the main topics can be summarized as follows.

1. Do the unsuccessful self-care patients have other complication diseases? If yes, what are those diseases?

The complication diseases have been found in all unsuccessful self-care patients as follows.

-Lung disease

-Kidney disease

-Blood pressure

2. What do the unsuccessful self-care patients expect from joining of this program?

They expect to be cured from diabetes or have the improved conditions of health without necessity to make their frequent appointment to see the doctor.

3. Do the unsuccessful self-care patients feel that the program has fulfilled their expectation once joining the Self-Care Program for diabetic patients?

They do not meet their expectation because they don't feel that their conditions of health have been improved before joining of this program.

4. What are the reasons that the unsuccessful self-care patients have decided to stop joining of Self-Care Program for diabetic patients or not to follow the advices?

They have to travel in a long distance and do not understand what nurses have told them.

5. What do the unsuccessful self-care patients think about the knowledge and information provided by the program? Are such knowledge and information useful and easily understandable?

The knowledge and information provided by this program are too difficult to understand for the unsuccessful self-care patients.

6. What should be improved in Self-Care Program according to the opinion of unsuccessful self-care patients?

The number of personnel should be increased and the explanation on diabetes knowledge provided should be easy to understand.

Part VIII: Test Results of Research Questions

What is the relationship between socio-demographic characteristics, knowledge, attitudes and practice of self care behaviors among Diabetes Mellitus Type II patients who get the multidisciplinary program at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand?

Table 11: The relationship between patients' personal background, knowledge, attitude, and self-practice behavior

Personal factors	Self Practice						X^2	df	p-value
	Low to moderate		High		Total				
	Number (%)		Number (%)		Number (%)				
Gender							9.78	1	.002*
Male	64	(53.8)	55	(46.2)	119	(100)			
Female	112	(37.1)	190	(62.9)	302	(100)			
Total	176	(41.8)	245	(58.2)	421	(100)			
Age									
43-52	18	(38.3)	29	(61.7)	47	(100)	3.49	3	.322
53-62	11	(61.1)	7	(38.9)	18	(100)			
63-72	7	(50.0)	7	(50.0)	14	(100)			
73-82	140	(40.9)	202	(59.1)	342	(100)			
Total	176	(41.8)	245	(58.2)	421	(100)			
Marital status							5.55	3	.136
Single	13	(59.1)	9	(40.9)	22	(100)			
Married	140	(41.9)	194	(58.1)	334	(100)			
Widowed,	18	(32.1)	38	(67.9)	56	(100)			
Divorce,	5	(55.6)	4	(44.4)	9	(100)			
Total	176	(41.8)	245	(58.2)	421	(100)			
							28.12	3	.000***
Education									
Under Grade 6	123	(37.5)	205	(62.5)	328	(100)			
Grade 6	36	(73.5)	13	(26.5)	49	(100)			
Grade 9	3	(15.8)	16	(84.2)	19	(100)			
Grade 12	9	(45.0)	11	(55.0)	20	(100)			
Total	171	(41.1)	245	(58.9)	416	(100)			

*p<0.05, ***p<0.001

Table 11: The relationship between patients' personal background, knowledge, attitude, and self-practice behavior (Continue)

Personal factors	Self Practice						X^2	df	p-value
	Low to moderate		High		Total				
	Number (%)		Number (%)		Number (%)				
Field of Work									
Agriculture	23	(29.1)	56	(70.9)	79	(100)	9.97	2	.007
Employment	84	(41.6)	118	(58.4)	202	(100)			
Government Officer	69	(51.1)	66	(48.9)	135	(100)			
Total	176	(42.3)	240	(57.7)	416	(100)			
Occupation									
Unemployed	69	(39.2)	107	(60.8)	176	(100)	25.58	3	.000
Temporary	28	(36.8)	48	(63.2)	76	(100)			
Housewife	40	(72.7)	15	(27.3)	55	(100)			
Permanent	39	(34.2)	75	(65.8)	114	(100)			
Total	176	(41.8)	245	(58.2)	421	(100)			
Blood Test									
Every 2 weeks	10	(66.7)	5	(33.3)	15	(100)	8.91	3	.031
Every month	70	(47.0)	79	(53.0)	149	(100)			
Every 3 months	87	(38.3)	140	(61.7)	227	(100)			
Every 6 months	4	(23.5)	13	(76.5)	17	(100)			
Total	171	(41.9)	237	(58.1)	408	(100)			
Group Knowledge									
Low	111	(63.8)	63	(36.2)	174	(100)	70.17	2	.000
Medium	43	(31.4)	94	(68.6)	137	(100)			
High	12	(13.5)	77	(86.5)	89	(100)			
Total	166	(41.5)	234	(58.5)	400	(100)			
Group Attitude									
Low	7	(43.8)	9	(56.3)	16	(100)	70.40	2	.000
Medium	155	(55.2)	126	(44.8)	281	(100)			
High	11	(9.5)	105	(90.5)	116	(100)			
Total	173	(41.9)	240	(58.1)	413	(100)			

*p<0.05, ***p<0.001

Table 11: The relationship between patients' personal background, knowledge, attitude, and self-practice behavior (Continue)

Personal factors	Self Practice						X^2	df	p-value
	Low to moderate		High		Total				
	Number (%)		Number (%)		Number (%)				
Household income									
Lowest thru 2000	133	(41.7)	186	(58.3)	319	(100)	1.56	2	.459
2001-8000	25	(36.8)	43	(63.2)	68	(100)			
8001 thru highest	18	(52.9)	16	(47.1)	34	(100)			
Total	176	(41.8)	245	(58.2)	421	(100)			
Household expense									
Lowest thru 2000	119	(43.8)	153	(56.3)	272	(100)	1.56	2	.459
2001-8000	52	(39.1)	81	(60.9)	133	(100)			
8001 thru highest	5	(31.3)	11	(68.8)	16	(100)			
Total	176	(41.8)	245	(58.2)	421	(100)			
First Diagnosis									
Lowest thru 5	32	(24.2)	100	(75.8)	132	(100)	33.03	2	.000***
6-10	53	(40.5)	78	(59.5)	131	(100)			
11 thru highest	91	(57.6)	67	(42.4)	158	(100)			
Total	176	(41.8)	245	(58.2)	421	(100)			

*p<0.05, ***p<0.001

The Chi – square result shown as table 11 find out relationship between patients' personal background, knowledge, attitude and behavior of self-practice, the study has found that the self-practice has relationship with gender by statistically significant (p<0.05), education with statistically significant (p<0.001), occupation with statistically significant (p<0.001), field of work with statistically significant (p<0.05), frequency of blood sugar test with statistically significant (p<0.05), knowledge with statistically significant (p<0.001) , attitude with statistically significant (p<0.001), duration of diabetes mellitus with statistically significant (p<0.001),. On the other hand, there are no relations found between self-practice and patients' average household expense, average household income, age as well as the marital status who are suffering from diabetes.

CHAPTER V

SUMMARY DISCUSSION, AND CONCLUSIONS

As the objectives of this research under the title of "Knowledge, Attitudes, and Practice (KAP) of Diabetes Mellitus Type II Patients in Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, Thailand", the aims of research are listed as follows.

1 To describe the socio- demographic characteristics among Diabetes Mellitus Type II patients who get the multidisciplinary program at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

2 To indicate the level of knowledge of self care behaviors learnt from multidisciplinary program (diet control, exercising, diabetes drug taking, and self-health care) at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

3 To elaborate the level of attitudes of self care behaviors learnt from multidisciplinary program (diet control, exercising, diabetes drug taking, and self-health care) at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

4 To assess the level of practice of self care behaviors learnt from multidisciplinary program (diet control, exercising, diabetes drug taking, and self-health care) at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

5 To determine the relationship between socio-demographic characteristics, patient history, knowledge, attitudes and practice of self care behaviors among Diabetes Mellitus Type II patients who get the multidisciplinary program at Diabetes Mellitus Clinic, Phanomphrai Hospital, Roi-Et Province, Thailand.

6. To determine the influential factors of the Diabetes Mellitus Type II patients who join the multidisciplinary program to either turned out as the successful self care behaviors or as the unsuccessful self care behaviors

5.1 Research Summary

Based on data collection, majority of diabetes mellitus type II patients joining of Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province are females (70.9%). In addition, all patients are Buddhists. Moreover, most of them have educational background below elementary school level (77.2%). Furthermore, a greater number of patients are married (79.8%), in which the unemployed patients have been found approximately 37.9% and about 42.1% of all patients are agriculturists. According to the rate of household revenue and expense, the average of patients' household revenue is approximately 2,422 baht/month while the average of patients' household expense is at 2,565 baht/month. Considered on personal lifestyle of patients, patients have known that they have diabetes for averagely 8 years. Most of them have blood sugar test every three months (54.9%), followed by the number of patients who have blood sugar test once a month (34.7%).

For the level of patients' knowledge, attitude, and self practice, the study has found that patients have self-care knowledge at low level (43.5%) with mean = 22.38, while the attitude of patients regarding self-care is mostly at moderate level (68.2%) with mean = 47.55 and the frequency of patients' self-care is shown at high level (58.2%) with mean = 53.88.

The Chi – square result shown as table 11 find out relationship between patients' personal background, knowledge, attitude and behavior of self-practice, the study has found that the self-practice has relationship with gender with statistically significant (p<0.05), education with statistically significant (p<0.001), occupation with statistically significant (p<0.001), field of work with statistically significant (p<0.05), frequency of blood sugar test with statistically significant (p<0.05), knowledge with statistically significant (p<0.001) , attitude with statistically

significant (p<0.001), duration of diabetes mellitus with statistically significant (p<0.001),. On the other hand, there are no relations found between self-practice and patients' average household expense, average household income ,age as well as the marital status who are suffering from diabetes.

5.2 Summary of Interview

5.2.1 Nurse

The qualification of nurse who responsible for Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, as follows.

- Should have nurse practice certification.
- Have been attended 5 days training toward diabetes care taker at diabetic association.
- Have at least 1 year experience of taking care of diabetic patient

Summary of Nurses' Interview

The factor which contributes the Self-Care Program success is that patients realize the importance of program and join the activities held regularly, including following the advices provided until patients are able to control their consumption behavior and exercise themselves appropriately.

For the obstacles found in this program, the interviews have indicated that patients live in the remote areas away from the hospital and have difficulty to travel to the hospital for medical care. Due to the far distance between houses and hospital or there are no personal care takers, therefore, patients need to leave the clinic before the end of activities session. Additionally, the lack of medical personnel is found as a problem regarding the program.

In case those patients could not regularly participate with the program, the hospital will, however, organize the local unit in order to closely take care the patients

living in the villages or create good activities for patients to participate in the program.

The qualifications of nurse required for this program are that the participated nurses shall have patience in providing the knowledge to patients while they shall not expect too much from the patients because that will discourage them.

5.2.2 Care Takers

-The qualification of Care taker who working for Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai -District, Roi-Et Province, as follows.

-Relative with patient or care taker from hospital which normally look after 10 patients per one care taker

-have at least 1 year experience of taking care of diabetic patient

Summary of Care Takers' Interview

The factor which contributes the Self-Care Program success is that patients cooperate with the activities held regularly, including following the advices provided until patients are able to control their consumption behavior and exercise themselves appropriately.

For the obstacles found in this program, the interviews have indicated that patients live far away from hospital and have no transportation to travel to the hospital for medical care. Additionally, the lack of medical personnel and medical equipment are found as a problem regarding the program.

According to the interview, the care takers have suggested that the hospital should increase the adequate number of professional officers in order to meet the demands of patients as well as increase in medical equipments so that the patients do not have to wait for medical care too long.

5.2.3 Successful Self-Care Patients

The qualification of Successful Self-Care Patients who attend Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, as follows.

-HbA1C less than 7

-FBS level less than 140 mg/dl

-do not have any complication

Summary of Successful Self-Care Patients' Interview

When patients have decided to participate in the program, the patients expected that they could have no complication diseases and fatigue symptom or faint without expectation of absolute cure methods. Patients have learned useful knowledge provided by the program, even though some of technical vocabularies are difficult and taken long time to understand. However, once patients have understood, they will strictly follow the advices. As a result likewise patients' expectation, they have less fatigue symptom as found before joining of the program.

Some of patients have suggested that the number of personnel and medical equipments should be increased in accordance with the needs of patients in order to reduce patients' waiting time. Besides, the participated nurses should patient, polite, and encourage patients. The patients also stated that they will, however, suggest other diabetic patients to participate in this program when they have chance.

5.2.4 Unsuccessful Self-Care Patients

The qualification of Unsuccessful Self-Care Patients who attend Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, as follows.

-HbA1C more than 7

-FBS level more than 200 mg/dl

-Have any complication

-Have been suffering from diabetic more than 20 years

Summary of Unsuccessful Self-Care Patients' Interview

The group of unsuccessful self-care patients often has complication diseases or tends to have complication diseases in which they expect that their symptom will be better once joining of the program without having regular appointment with the doctor. After joining of the program, they have found no changes as their expectation and they also needed to travel to the hospital in a long way.

Moreover, the unsuccessful self-care patients think that the knowledge provided by the program is too difficult to understand. Therefore, the new approach of knowledge presentation should be improved for easier understanding.

5.3 Sample

The group of quantitative sampling applied in this study is selected from the Diabetes Mellitus Type II Patients who participate in the Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province with the amount of 430 patients between the age of 18 and 85 years old both sexes who joined the multidisciplinary program at Phanomphrai Hospital, Roi-Et, Thailand for at least 2-8 months. The study of quantitative excluded the diabetes type I patients, diabetes type II patients who have complications, who are pregnant, who are from elsewhere than from Phanomphrai local residents (who might be visiting clinics as well), and who are not willing to participate in the current research. . Additionally, the research tools used in this study are the questionnaires relating to demographic characteristics, level of personal knowledge, attitude, and self practice..

The study population for qualitative included 20 interviewees who selected base on 4 groups (5 persons for each group): (1) nurse, (2) care taker, (3) successful self-care behavior patients and (4) unsuccessful self-care behavior patients

To determine the influential factors of the Diabetes Mellitus Type II patients who join the multidisciplinary program to either turned out as the successful self care behaviors or as the unsuccessful self care behaviors.

5.4 Reliability Testing

According to the questionnaires regarding the level of knowledge, attitude, and self-practice which have been used in this research, such both questionnaires have been passed the quality test with 30 patients in the hospital located in the Northeast of Thailand by having the reliability level based on Conbach Alpha Coefficient with r > 0.8.

5.5 Data Collection

For data collection, the interviewers have been trained properly in order to understand all questions identified in the questionnaires. After that, the data collected have been analyzed by SPSS program regarding personal background and level of knowledge, attitude, and self practice, including correlation analysis between demographic characteristics, level of knowledge, attitude, and self practice. Statistic that was used to analyze data composed of frequency, percentage, standard deviation, mean, medean, Chi-square and Pearson Correlation.

5.6 Research Discussion

1. All patients are Buddhists and most of them are female, married, graduated in the level of elementary school or below, and work as agriculturalists. Such information found in this research is associated with the study of Piyamal Archasantisuk (2007, p.62) in which the study indicated that 80% of patients are female, 85% of patients are married, 90% of them graduated in the level of elementary school or below, and approximately 65% of patients are working in agriculture. Nevertheless, Intraporn Promprakarn (1998, p.126) has stated in her research that the reason that there are the number of female patients more than male patients is because males have self-practice behavior, especially, in exercise more than females.

2. The ages of patients are 51 years in average. This information is found in accordance with the study of Thassanee Siriwatthanapornkul (2006, p.66) which indicated that the diabetes mellitus type II patients have been found between the ages range of 41-60 years old, as well as the study of Soontree Nakasathien (2004, p.40)

which noted that the diabetes mellitus type II patients have been found in the patients who are older than 40 years old.

3. Self-practice has the correlation with the level of self-care knowledge found in the group of diabetes mellitus type II patients. In this case, there have been found to be associated with the study of Remuan Nansuppawat (1981, p.83-84) which stated that the level of diabetic knowledge has the correlation with self-practice. In addition, L.W. Green (Phitsanulok Provincial Health Office, 1998, p.4) has noted that the basic and stimulate factors to personal behavior performance are knowledge, believe, popularity, and perception.

4. The correlation between self-practice and attitude, there may be the result from medical care provided by nurses based on nurses' patient and sincere care giving to patients. This is also found in the research of Supattra Phoomdandin (1991, p.89) which noted that the good relationships created between nurse and patient are very necessary because such good relationships will help in better learning on self-practice.

5. For the correlations between self-practice and ages, marital status as well as patient's average household revenue, it has no correlation between each other. Due to this program is a free of charge. Furthermore, age and average household revenue do not have correlation between self care patient**.**

5.7 Recommendations

5.7.1 Recommendation on Research Outcome

According to this research outcome which has been found that knowledge and attitude have the correlations with self-practice behaviors among the group of diabetes mellitus type II patients, this means that patients will be able to understand correctly about their diseases if the knowledge on diabetes disease has been provided regularly to the patients and the patients will have the positive attitude to the concept of self-practice along with their own accurate self-practice performance in the future. Hence, the clinic should create the useful program's activities by aiming to promote in

knowledge providing to patients, reduce difficulty against patients' understanding, and support the patients to improve their self-practice respectively.

The comparison of knowledge level by percentage in each part which are consisting of diet control, drug taking, and self care of diabetes type II patients have shown that, the least knowledge is shown on the drug taking component which equals to 55.3%, whereas the highest level of knowledge is about self care which equals to 99.3. Based on Table 12, the diabetes type II patients have diet control knowledge at moderate level, which equals to 96.2%. So, the Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province should provide more knowledge about drug taking as well as other issues relating to the diabetes.

The comparison of attitude level in each part which are consisting of diet control, drug taking, and self care of diabetes type II patients have shown that the poor attitude lie on drug taking which equals to 58.8%, whereas the utmost attitude is about self care which equals to 99.3. Based on Table 13, the diabetes type II patients have diet control attitude at moderate level, which equals to 96.2%. So, the Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province should create positive strategies eht evorpmi ot attitude on drug taking and diet control.

The percentage of Self Practice level in each part which are consisting of diet control, drug taking, self care and exercising of diabetes type II patients have revealed that the lowest attitude is remain on the issue of drug taking and exercising which are equal to 67.4%, whereas the highest level of practice is about self care which equals to 99.3%. Based on Table 14, the diabetes type II patients have diet control practice at moderate level, which equals to 96.2%. So, the Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province should come up with more strategies to influence the Diabetes Mellitus Type II patients to have a better self care practice especially about drug taking and exercising.

5.7.2. Recommendation for Further Research

5.7.2.1 The aforementioned study indicates only the related analysis found among group of diabetes mellitus type II patients in Self-Care Program at Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, Thailand. The study case taking place in other provinces where its provincial hospitals hold the Self-Care Program for diabetic patients, for example, Nakornthai Crown Prince Hospital in Phitsanulok Province then should be studied for further research as recommendation.

5.7.2.2 The study has shown that the attitude level of Diabetes Mellitus type II patients in drug taking is very low, the further studies should be conducted under this issue on how to rise up the attitude level of the Diabetes Mellitus type II patients.

5.7.2.3 The study has shown that the knowledge level of Diabetes Mellitus type II patients in drug taking is rest at the lowest end; the further studies are suggested on how to make the Diabetes Mellitus type II patients have a positive attitude toward drug taking.

5.7.2.4 The study has shown that the drug taking and exercising level of Diabetes Mellitus type II patients are lie at the lowest point, the additional studies on how to make the Diabetes Mellitus type II patients have a better self care behaviors toward drug taking and exercising should be carry out. A more complex, intervention program should be created to help the Diabetes Mellitus type II patients understand their position and appreciate about this disease. After the program, the patients should remain themselves as the good self care behaviors, to control their blood sugar level, blood pressure as well as taking care of their eyes and feet.

5.7.2.5 The additional study on other variations may be broadened in order to increase ability of forecasting equation on self-practice for diabetic patients.

5.7.2.6 The same variations may be re-studied but in the groups of different diabetes mellitus types for further comparison.

REFERENCES

Aekplakorn, W., Stolk, R.P., Neal, B., Suriyawongpaisal, P., Chongsuvivatwong, V., and Cheepudomwit, S. 2003. The prevalence and management of diabetes in Thai adults: the international collaborative study of cardiovascular disease in Asia. Diabetes Care. 26(10): 2758-2763.

American Diabetes Association. 2007. Diabetes Statistic [Online]. Available from: http://www.diabetes.org/diabetes-basics/diabetes-statistics/. [October 19, 2009].

American Diabetes Association. 2008. 2008 Annual Report [Online]. Available from: http://www.diabetes.org/assets/pdfs/ada-2008-annual-report.pdf. [October 19, 2009].

American Diabetes Association. 2009. Diabetes Basic [Online]. Available from: http://www.diabetes.org/diabetes-basics/ . [October 19, 2009].

American Diabetes Association. 2010a. Diabetes Care [Online]. Available from: http://care.diabetesjournals.org/content/26/10/2758.full. [January 5, 2010].

American Diabetes Association. 2010b. Genetics of Diabetes [Online]. Available from: http://www.diabetes.org/diabetes-basics/genetics-of-diabetes.html. [January 5, 2010].

Asian Diabetes Association. 2010a. Asian Diabetes Statistics [Online]. Available from: http://www.asiandiabetes.org/category/asian-diabetes-statistics/ [January 5, 2010].

Asian Diabetes Association. 2010b. Diabetes Research Breakthrough**:** Escaping The Diabetes Trap Discover the *Root Cause* of Diabetes [Online]. Available from: http://www.asiandiabetes.org/asian-diabetes-association-observes-world-diabetes-day/ [January 5, 2010].

Asia Pacific Cohort Studies Collaboration. 2002. The effects of diabetes mellitus on the risks of major cardiovascular diseases and death in the Asia-Pacific region. Diabetes Care. 26: 360–366.

Baker, M. J. 2003. The Marketing Book Fifth edition [Online]. Available from: http://www.google.com/books?hl=th&lr=&id=P_ovoY2ZcbkC&oi=fnd&pg=PR13&dq=Baker,+M.+J.+2003.+The+Marketing+Book+Fifth+edition&ots=0MV6_CpGNj&sig=C9PhTylkdU8gmJVvMtEcOw-xpFE#v=onepage&q&f=false [November 5, 2009].

Biley, C. 2000. Potential new treatments for type 2 diabetes. Trends in Pharmacological Sciences. 21(7): 259-265.

Bruggen, R.A., Gorter,K.J., Stolk, R.P., Verhoeven, R.P., and Rutten, G.E.H.M. 2008. Implementation of locally adapted guideline on type 2 diabetes. Oxford journal. 25(6): 430-437

Bryman, A., and Cramer, D. 2005. Quantitative Data Analysis with SPSS 12 and 13: a guide for social scientists [Online]. Available from: http://books.google.co.uk/books?id=c7aPGyBvUCcC&printsec=frontcover&source=gbs_navlinks_s#v=onepage&q&f=false. [October 22, 2009].

Chaturawit, C. Development of Educational Tool model for self-help meal planning in type I diabetic adolescent : carbohydrate counting concept. Master's Thesis, Department of Public Health Faculty of Graduate Studies Mahidol University, 2005.

Cronbach, J. L. 1990. Essentials of Psychological Testing. New York: Harper Collins. 5:204.

Cure Research. 2008b. Prevention of diabetes [Online]. Available from: http://www.cureresearch.com/d/diabetes/prevent.htm. [October 21, 2009].

Cure Research. 2008a. Statistics about Type 2 diabetes [Online]. Available from: http://www.cureresearch.com/d/diab2/stats.htm. [October 21, 2009].

Diabetes Association of Thailand. 2007. About diabetes [Online]. Available from: http://www.diabassocthai.org/patient/khownledge-patient1.html. [October 20, 2009].

Diabetes UK. 2008. Guide to Diabetes Complication [Online]. Available from: http://www.diabetes.org.uk/Guide-to-diabetes/Complications/ [October 20, 2009].

Hussain, A., Claussen, B., Ramachandran, A., and Williams, R. 2006. Prevention of type 2 diabetes: A review. Diabetes Research and Clinical Practice. 76(3): 317-326.

India Herbs-Ancient Remedies for Modern Times. 2010. A Proven Natural Approach to Optimal Blood Chemistry [Online]. Available from: http://www.ayurgold.com/index.htm?aff=gayurgold&gclid=CISFpqHmxKECFcFS6wodWVk9-g. [January 3, 2010].

Jariya, W. 2006. Effectiveness of participatory learning program [Online]. Available from:http://cphs.healthrepository.org/bitstream/123456789/1220/3/Thesis2006_Wutthichai.pdf [October 20, 2009].

King, H., Aubert, R., and Herman, W. 1998. Global Burden of Diabetes, 1995–2025: prevalence numerical estimates and projections. Diabetes Care. 21: 1414–1431.

Kuller, L., et al. 2000. Diabetes mellitus: sub clinical cardiovascular disease and risk of incident cardiovascular disease and all-cause mortality. *Arteriosclerosis Thrombosis, and Vascular Biology*. 20: 823–829.

Medscape Today. 2007. Providing Diabetes Care to Arab Migrants in the UK: Diabetes and obesity in Arab populations [Online]. Available from: http://www.medscape.com/viewarticle/569266_2. [October 20, 2009].

National Diabetes Information Clearinghouse. 2009. Diabetes Overview [Online]. Available from: http://diabetes.niddk.nih.gov/dm/pubs/overview/. [October 23, 2009].

Neuman, W.L. 2000. Social research methods: *Qualitative and quantitative approaches* [Online]. Available from: http://www.google.com/books?hl=th&lr=&id=OvzPabc83HoC&oi=fnd&pg=PR14&dq=Neuman,+W.L.+2000.+Social+research+methods:+Qualitative+and+quantitative+approaches.+London:+Allyn+and+Bacon&ots=qNVI3M1vk7&sig=fgL_5W_57ZnOCsk1Q-6vFGRrTT4#v=onepage&q=Neuman%2C%20W.L.%202000.%20Social%20research%20methods%3A%20Qualitative%20and%20quantitative%20approaches.%20London%3A%20Allyn%20and%20Bacon&f=false [October 23, 2009].

Phanomphrai Hospital. 2008. Annual Situational Study of Chronic Diseases. Phanomphrai Hospital: Roi-Et province. Annual Report. 54pp. (in Thai).

Primary Care Unit Innovation. 2006. Diabetes program at Lumpang [Online]. Available from: http://www.pcuinnovation.com/pcu/920. [October 20, 2009].

Registered Nurses' Association of Ontario. 2004. Assessment and Management of Foot Ulcers for People with Diabetes [Online]. Available from: http://www.rnao.org/Storage/11/536_BPG_Assessment_Foot_Ulcer.pdf. [October 20, 2009].

Saydah, S., Eberhardt, M., Loria, C., and Brancati, F. 2002. Age and the burden of death attributable to diabetes in the United States. American Journal of Epidemiology. 156: 714–719.

Thidasiri, L. 2000. People eat fresh fruit and vegetable while reduce or not consume carbohydrate and fat will help reduce glucose in blood level without taking the medicine. Ruamtad Press. 56pp. (Thai Version).

World Health Organization. 2008a. Diabetes mellitus [Online]. Available from: http://www.wpro.who.int/health_topics/diabetes_mellitus/. [October 20, 2009].

World Health Organization. 2008b. What is Diabetes? [Online]. Available from: http://www.who.int/mediacentre/factsheets/fs312/en/index.html. [October 20, 2009].

Zikmund, William G. 2000.Business Research Method [Online]. Available from: http://www.lith.liu.se/styrelse/protokoll/05-5/05-5-3.pdf [October 20, 2009]..

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APPENDICES

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Appendix A

The results of Knowledge, Attitude and Practice level in each part

Table 12 Knowledge Level of Diabetes Mellitus Type II Patients in Diet Control, Drug taking and Self-Care Part

Group of Knowledge	Level of Knowledge	Percentage	Total %
Diet Control	Lowest	54.17	100
Drug Taking	Highest	70.58	100
Self Care	Moderate	59.55	100

The percentage of knowledge level in each part which are consisting of diet control, drug taking, and self care of diabetes type II patients, the study has shown that the outcome of only 54.17% of the total score place in the knowledge about diet control. This is considered as the lowest component out of the three, with many patients unable to answer both questions. Between the lines the questions were asked regarding the self-care, the results have shown that 59.55% of the total score have the knowledge about self-care., Whereas on the summit end the questions has positioned itself on the knowledge about the drug taking, and came out with the result equals to 70.58 %. So, the Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, should provide more knowledge on the diet control and self care.

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Table 13 : Attitude Level of Diabetes Mellitus Type II Patients in Diet Control, Drug taking and Self-Care Part

Group of Attitude	Level of Attitude	Percentage	Total %
Diet Control	Highest	80.19	100
Drug Taking	Lowest	71.86	100
Self Care	Moderate	79.34	100

The percentage of attitude level in each part are consisting of diet control, drug taking, and self care of diabetes type II patients. .According to the fact that there were only 1 out of 20 questions that involve the attitude of drug taking and the answers given have been divided into 3 levels, with the minimum equals to 1.00 and the maximum equals to 3.00. The drug taking knowledge total score of 71.86% has been produced and shown as the lowest out of the three categories. This demonstrates that only a certain amount of patients have an optimistic attitude towards drug taking. The highest level of attitude proves to be on the category of diet control with the findings of 80.19 %. This illustrates that most of the patients have a positive attitude towards the diet control. Whereas between the two ends, lie the class of self care, which scores at the moderate level of 79.34 %. So, the Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province, should come up with a new strategy to give the patients positive attitude about drug taking and self care.

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Table 14 : Self Practice Level of Diabetes Mellitus Type II Patients Attitude Level of Diabetes Mellitus Type II Patients in Diet Control, Drug taking, Self-Care Part and Exercising Part

Group of Attitude	Level of Attitude	Percentage	Total %
Diet Control	Lower	77.30	100
Drug Taking	Highest	84.38	100
Self Care	Moderate	77.51	100
Exercising	Lowest	71.01	100

The percentage of Practice level in each part of diabetes type II patients, has been exhibited that the patients seems to be short of level of practice in some particular fields from Exercising as the most severe to Self-care as the admirable, with the self care and diet control rest between the two. In Exercising, the score of 71.01% were constructed as the lowest out of the four fields, additionally there was only one question on Exercising. The answers provided have been split into 3 levels with the minimum equals to 1.00 and the maximum equals to 3.00. The second weakest is on diet control which scored as low as 77.30 %. Furthermore self care is considered as one of the stronger fields in the level of practice with the score of 77.51 %. Finally, the most admirable field with the highest score of 84.38 % is devoted to field of drug taking. . So, the Diabetes Mellitus Clinic, in Phanomphrai Hospital, Phanomphrai District, Roi-Et Province should provide an influential strategy on exercising and diet control to the Diabetes Mellitus Type II patients.

Appendix B

Questionnaire

1. PERSONAL INFORMATION

Instruction: please give a tick in front of the answer best fits you.

1.1 Socio-demographic data

1) Gender: ( )Male ( )Female

2) Date of Birth_____dd/mm/yr. Age_____years

3) What is your religion?

( )Buddhism ( )Hindu

( )Christian ( )Muslim

( )Others_____

4) Education level

( )Under Grade 6

( )Grade 6

( )Grade 9

( )Grade 12

( )Bachelor's Degree

( )Master's Degree or more

5) Martial status

( )Married ( )Single

( )Divorced ( )Widowed

( )Others_____

6) Work status

( )full time ( )part time

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( )retired ( )unemployed

( )stay at home

7) Occupation

( )Argriculture ( )Employee

( ) Student . ( )Government official

( )Others…….

8) What is the average total household income per month in your family?

_____baht per month.

9) What is the average total household expense per month in your family?

_____baht per month.

1.2 Patient History

10) How long has it been since you were first diagnosed with diabetes?

_____

11) How often do you check your blood sugar as per physician's appointment?

( )Once every 2 weeks

( )Once every month

( )Once every 3 months

( )Once every 6 months

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2. PATIENT HISTORY

Type of lab test	after joining the program(the most recent information on lab test/check up)	Result
Blood sugar level		
HbA1c level		
Blood pressure		
Risk of eye and feet complication		

3. KNOWLEDGE SECTION

Instruction: please give a tick in the column best fits your opinion.

1. Right means the statement is correct.

2. Wrong means the statement is not correct.

3. If you can not decide, after doing your best, you may answer ‘do not know’.

Item	Statement	Right	Wrong	Do not know
1.	Diabetic patients must take blood sugar reducing medication before meal starts.			
2.	Diabetic patients do exercise to reduce weight.			
3.	Diabetic patients use diet control forever although blood sugar level becomes normal.			
4.	Diabetes type II is caused by dysfunction of pancreas.			
5.	If father or mother is a diabetes patient, children are at risk of developing diabetes.			
6.	Fiber rich food is good for diabetic patients because it reduces fatty acid and blood sugar by digesting slowly.			

Item	Statement	Right	Wrong	Do not know
7.	Starch, sugar products and alcoholic drinks are all okay for diabetic patients to take.			
8.	Complication of failure to control diabetes is, for instance, lung infection.			
9.	As a diabetic patient, when you are thirsty and urinate a lot, you drink much to equal urine output.			
10.	The symptom when one has hyperglycemia is nausea and feel fainted.			
11.	For diabetic type II patients, fasting blood sugar level should be below 140 mg/dl.			
12.	To treat low blood glucose reactions is to take 1-2 teaspoon (s) of sugar.			
13.	Common symptoms of low blood glucose are cramps in the stomach and constipation.			
14.	Regarding food pyramid, fats, oils and sweets make the top most part of the food pyramid so you should always avoid this group of food intake.			
15.	Pre-meal blood sugar of diabetic patients should be 180 mg/dl.			
16.	Fasting blood sugar of a diabetes patient is higher than that of a normal person.			
17.	Dizziness is a symptom of low blood sugar level of diabetes patient.			
18.	A person who starts to develop diabetes will eat large quantity of food but at the same time loose weight.			

Item	Statement	Right	Wrong	Do not know
19.	Before going for the test of blood sugar level at hospital, food and water are restricted for at least 8 hours.			
20.	Diabetic patients can consume all type of green vegetables with unlimited quantity.			
21.	Diabetic patients should not eat snacks or have irregular meals.			
22.	Regular exercises can reduce risks and complications of diabetes.			
23.	Additional food or soft drink intake is required if diabetic patient practices exercise.			
24.	If diabetic patients feel dizzy after taking medicine, they can adjust medicine dosage by themselves.			
25.	Diabetes may cause glaucoma.			
26.	Diabetes may cause hypertension.			
27.	Diabetes may cause renal failure.			
28.	Diabetic patients who have injured with small wounds can prolong to see physician or health worker.			
29.	Diabetes is a condition in which a body contains a higher level of sugar in the blood than normal.			
30.	The most accurate method of monitoring diabetes is to check urine sugar.			
31.	One of diabetes symptoms is quickly healing of wounds.			
32.	Diabetes, if not well treated, can lead to foot ulcers.			
33.	Proper foot care can prevent foot ulcers.			

Item	Statement	Right	Wrong	Do not know
34.	Hot water is proper for patients to wash their feet.			
35.	Drying patient's feet after washing them is essential, especially between toes.			
36.	Diabetes patient can use moisturizer on feet and between the toes.			
37.	Tight stockings or any clothing that constricts the legs and feet should be avoided for diabetes patient.			
38.	In case of foot problems, patients should refer to foot care specialists at the hospital promptly.			

4. ATTITUDE SECTION

Instruction: please give a tick in the column best fits your opinion.

1. Agree means you totally agree with the statement.

2. Not certain means you are not sure with the statement.

3. Disagree means you absolutely disagree with the statement.

Item	Statement	Agree	Not certain	Disagree
1.	It is not necessary to control the amount of food when taking oral diabetes pills.			
2.	Nothing can stop a pre-diabetic condition turning into a full brown diabetic condition.			
3.	Type 2 diabetes can not be prevented through lifestyle change alone.			
4.	Once you have been diagnosed with type 2 diabetes, nothing can keep it from getting worse.			

Item	Statement	Agree	Not certain	Disagree
5.	Lard is suitable for cooking in diabetes patient.			
6.	Diabetic patients should limit quantity of food and sweet intakes.			
7.	Nails care is not important for diabetic patients.			
8.	There is nothing wrong when diabetes patients wear high heels, sandals, and thongs.			
9.	To make an observation on indication of infection and potential ulcers is necessary for diabetic patients.			
10.	To change shoes often during the day for diabetic patients is not suggested.			
11.	Going barefoot is not at all recommended for diabetic patients.			
12.	Shaving the corns or calluses by diabetic patients is not appropriate.			
13.	It is true that to control and prevent complication of diabetes, one should control food intake, take exercise and exact medication.			
14.	To eat a snack before exercising is recommended to avoid low blood glucose reactions (hypoglycemia).			
15.	It is the fact that excess blood glucose for a long time would damage your eyes, kidney's and heart vessels.			
16.	It is a fact that diabetic patients visit the physician to check for symptoms of other complications.			
17.	It is true that people with diabetes type II can maintain good blood sugar control by following a proper meal plan.			

Item	Statement	Agree	Not certain	Disagree
18.	It is a fact that to have a stomach pain is one symptom of diabetes type II.			
19.	As a regular exercise program does not affect the blood glucose level, it is a waste of time to keep exercising.			
20.	Drug intake for diabetic patients can be done by the own judgment of diabetic patient.			

5. PRACTICE SECTION

Instruction: please give a tick in the column best fits your opinion.

1. Always or often means you practice the statement more than one-half of your available time for the past 30 days.

2. Occasionally means you practice the statement between one-half to one-third of your available time for the past 30 days.

3. Rarely/never means you practice the statement less than one-third of your available time for the past 30 days.

Item	Statement	Always/ often	Occasio n-ally	Rarely/ Never
1.	You have your eyes checked as recommended by your physician/nurse.			
2.	You have a controlled and planed diet to control your blood sugar.			
3.	You inspect your feet daily.			
4.	You watch for changes in color or texture, odor, and firm or hardened areas, which may indicate infection and potential ulcers.			

Item	Statement	Always/ often	Occasio n-ally	Rarely/ Never
5.	Your toenails are trimmed short and the edges field to avoid cutting adjacent toes.			
6.	You do not use medicated pads.			
7.	You keep appointment with your doctor when you have wound.			
8.	You eat 3 times per day and 2 sweet breaks.			
9.	You strictly comply with medication intake as advised by the hospital's pharmacist.			
10.	You eat sweet taste food/snack.			
11.	You eat vegetable.			
12.	You drink less than 6 glasses of water per day.			
13.	You exercise less than 15 minutes per day.			
14.	You wear shoes whose size is smaller than your feet.			
15.	You brush your teeth only in the morning after getting up.			
16.	When you have strain, you abuse to the others.			
17.	When you have symptoms of a chronic wound, you go to see the doctor even before the date of set appointment.			
18.	When thirsty, you drink soft drink.			
19.	You take medication at fixed time as prescribed by the physician.			
20.	When you run out of prescribed medicine, you simply wait until your next appointment.			
21.	When medication causes sickness, you take anti sickness medication by yourself.			

Item	Statement	Always/ often	Occasio n-ally	Rarely/ Never
22.	When you feel hungry and fainted, you take something sweet.			
23.	When you feel worried, you talk things over with a friend or family member.			

Interview questions for nurse

1. What are the main processes of multidisciplinary programme?

2. What are the objectives of the multidisciplinary programme?

3. Do you think the programme has been successes their objectives or not? And please give the reason.

4. What are the obstacles of the multidisciplinary programme?

5. What are the strength points of the multidisciplinary programme?

6. What are the critical success factors of multidisciplinary programme?

7. Do you think that the demands and expectation of patient joining the multidisciplinary program are increasing?

8. Do resources such as nurse, physician and equipments in the multidisciplinary program at Phanomphrai hospital enough for satisfy target patients? If not, what do you need?

9. Based on your experience, what is success rate of multidisciplinary programme?

10. What are the main factors that lead to successful patient in this program?

11. What are the main factors that lead to unsuccessful patient in this programme?

12. What are key indicators for successful patients in term of lab test?

13. What techniques would you employ to persuade those unsatisfied patients to rejoin the program?

14. In term of personal behaviour, what are the main factors leading to unsuccessful patients?

15. In term of unsuccessful patients, what other diseases are they normally infected from being diabetes?

16. How would you motivate patients to follow the multidisciplinary program?

17. With you experience, what are the issues in multidisciplinary programme that need further improvement? and how?

18. How long that you have been working for this multidisciplinary program ?

19. What is the requirement for the nurse who hast to working for this multidisciplinary program ?

Interview questions for care taker

1. What are the main processes of multidisciplinary programme?

2. What are the objectives of the multidisciplinary programme?

3. Do you think the programme has been succeeded their objectives or not? And please give the reason.

4. What are the obstacles of the multidisciplinary programme?

5. What are the strength points of the multidisciplinary programme?

6. What are the critical success factors of multidisciplinary programme?

7. Do resources such as nurses, physicians and equipments in the multidisciplinary program at Phanomphrai hospital enough for satisfying target patients? If not, what do you need?

9. What are the expected outcomes of the hospital's multi-disciplinary programme for diabetes patients?

10. What are core processes leading to the success of multi-disciplinary programme?

11. What are the appropriate methods to help diabetic patients controlling glycaemia?

12. For diabetic patients, what other diseases should they regularly monitor?

13. Based on your experience, why some of diabetic patients stop being participated in the program?

14. In term of personal behaviour, what are the main factors leading to unsuccessful patients?

15. In term of unsuccessful patients, what other diseases are they normally infected from being diabetes?

16. What are the critical factors leading to the failure of patients in term of self-care behaviour?

17. With you experience, what are the issues in multidisciplinary programme that need further improvement? And how would you recommend for the improvement?

18. How long that you have been taking care of the patients who join the multidisciplinary program ?

19. What is the requirement for the care taker who hast to working for this multidisciplinary program ?

Interview questions for successful self-care behaviour patients

1. How old are you? What do you do for living?

2. Does anyone in your family have diabetes disease?

3. How long have you been infecting in diabetes? Do you have any others interrupt disease?

4. How would you realise the disease? What was it?

5. What do you expect from joining the multidisciplinary program?

6. Does your actual experience meet your expectation?

7. What benefit do you get from joining the multidisciplinary program?

8. What do you think about knowledge provide by the multidisciplinary program? Are there easy to understand and useful?

9. What knowledge do you learn from the multidisciplinary program?

10. How often do you have an opportunity for leisure activities and exercise?

11. How often do you check your blood sugar and blood pressure?

12. How often do you check your eye and feet?

13. What is your eating behaviour look like?

14. In your opinion what is the best solution to reduce the diabetes condition?

15. How satisfied are you with your diabetes conditions now? Why?

16. How much and how often do you need medical treatment for your diabetes disease? Where do you get them from?

17. Do you have any positive change behaviour regarding diabetes after joining the multidisciplinary program?

18. How satisfied are you with the multidisciplinary program?

19. What are the issues that need further improvement?

20. What are the factors that motivate you to strictly follow the multidisciplinary program?

21. Would you recommend this programme to another person?

Interview question for unsuccessful self-care behaviour patients

1. How old are you? What do you do for living?

2. Does anyone in your family have diabetes disease?

3. How long have you been infecting in diabetes?

4. What do you expect from joining the multidisciplinary program?

5. Does your actual experience meet your expectation?

6. What are the reasons that make you stop coming or joining the multidisciplinary programme?

7. What do you think about knowledge provide by the multidisciplinary program? Are there easy to understand and useful?

8. How satisfied are you with the multidisciplinary program?

9. What are the issues that need further improvement?

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Appendix C

Questionnaire (Thai)

1. ข้อมูลส่วนตัว

วิธีการตอบแบบสอบสัมภาษณ์: กรุณาทำเครื่องหมายหน้าคำตอบที่ท่านต้องการเลือก

1.1 ข้อมูลด้านกายภาพทางสังคม

1) เพศ: ( ) ชาย ( ) ผู้หญิง

2) วันเกิด_____วัน/เดือน/ปี อายุ_____ปี

3) ศาสนา

( ) พุทธ ( ) ฮินดู

( ) คริสต์ ( ) มุสลิม

( ) อื่นๆ_____

4) ระดับการศึกษา

( ) ต่ำกว่าประถมศึกษา

( ) ประถม 6

( ) มัธยมศึกษาตอนต้น

( ) มัธยมศึกษาตอนปลายหรือเทียบเท่า

( ) ปริญญาตรีหรือเทียบเท่า

( ) ปริญญาโทหรือสูงกว่า

5) สถานะภาพ

( ) แต่งงาน ( ) โสด

( ) หย่า ( ) เป็นม่าย

( ) อื่นๆ _____

6) การงาน

( ) งานประจำ ( ) งานชั่วคราว

( ) เกษียณ ( ) ว่างงาน

( ) แม่บ้าน ( ) อื่นๆ……

7) กรุณาระบุประเภทงานที่ท่านทำ

( ) เกษตรกรรม ( ) รับจ้าง

( ) นักเรียน/นักศึกษา ( ) รับราชการ

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( ) อื่นๆโปรดระบุ.....

8) กรุณาระบุรายได้ของครอบครัวของท่านต่อเดือน.....

9) กรุณาระบุรายจ่ายของครอบครัวท่านต่อเดือน.....

1.2 ข้อมูลด้านการดำเนินชีวิต

10) ท่านเป็นเบาหวานมานานแค่ไหนแล้ว?

_____

11) ท่านทำการตรวจระดับน้ำตาลในเลือดบ่อยแค่ไหนตามคำนัดของแพทย์

( ) หนึ่งครั้งต่อสองสัปดาห์

( ) หนึ่งครั้งต่อเดือน

( ) หนึ่งครั้งต่อสามเดือน

( ) หนึ่งครั้งต่อหกเดือน

2. ประวัติคนไข้

ประเภทของการทดสอบ	หลังเข้าร่วมโครงการล่าสุด	ผล (ผ่าน/ตก)
ระดับน้ำตาลในเลือด		
ระดับ HbA1c		
ระดับความดันเลือด		
ตรวจตาและเท้า		

3. ระดับความรู้

วิธีการตอบแบบสัมภาษณ์: กรุณาเลือกคำตอบที่ตรงตามความคิดของท่าน

1. ถูกต้อง หมายถึง ข้อความนั้นถูกต้อง
2. ผิด หมายถึง ข้อความนั้นไม่ถูกต้อง
3. กรุณาเลือก ไม่ทราบ ถ้าท่านไม่สามารถตัดสินใจได้

ข้อ	ข้อความ	ถูกต้อง	ผิด	ไม่ทราบ
1.	คนไข้โรคเบาหวานต้องทานยาลดระดับน้ำตาลในเลือดก่อนรับประทานอาหาร			

ข้อ	ข้อความ	ถูกต้อง	ผิด	ไม่ทราบ
2.	คนไข้โรคเบาหวานควรออกกำลังกายเพื่อลดน้ำหนัก			
3.	คนไข้โรคเบาหวานควรควบคุมอาหารตลอดเวลาแม้ว่าระดับน้ำตาลในเลือดจะปกติ			
4.	โรคเบาหวานเกิดจากการทำผิดปกติของตับอ่อน			
5.	ถ้าพ่อ แม่เป็นโรคเบาหวาน ลูกก็จะมีความเสี่ยงในการเป็นโรคเบาหวาน			
6.	อาหารที่มีกากใยสูงดีต่อคนไข้โรคเบาหวานเพราะช่วยลดไขมันและน้ำตาลโดยการทำให้ร่างกายย่อยอาหารช้าลง			
7.	แป้งและน้ำตาลเป็นผลิตภัณฑ์จากเครื่องดื่มแอลกอฮอลล์ซึ่งคนไข้โรคเบาหวานสามารถรับประทานได้			
8.	ความซับซ้อนที่ผิดพลาดในการควบคุมของโรคเบาหวานเช่น โรคปอดติดเชื้อ			
9.	คนไข้โรคเบาหวานดื่มน้ำมากเพราะหิวน้ำและปัสสาวะมากเนื่องจากร่างกายต้องการรักษาสมดุลของยูรีนที่ปล่อยออกมาทางปัสสาวะ			
10	อาการหนึ่งของภาวะน้ำตาลในเลือดสูงคือรู้สึกคลื่นไส้และเป็นลม			
11.	สำหรับคนไข้โรคเบาหวานน้ำตาลในเลือดควรอยู่ที่ 140 mg/dl.			
12.	วิธีการในการแก้ปัญหาระดับน้ำตาลในเลือดต่ำคือ กินน้ำตาล1-2 ช้อนโต๊ะ			
13.	อาการหนึ่งของระดับน้ำตาลในเลือดต่ำคือ เป็นตะคริวที่กระเพาะอาหาร และท้องผูก			
14.	ตามหลักของทฤษฎี พีระมิดอาหาร ไขมัน น้ำมันและของหวาน เป็นส่วนที่อยู่บนสุดของพีระมิด หมายความว่าท่านควรหลีกเลี่ยงการรับประทานสิ่งเหล่านี้			
15.	ระดับน้ำตาลในเลือดก่อนรับประทานอาหารของคนไข้โรคเบาหวานควรจะอยู่ที่ 180 mg/dl.			
16.	ระดับน้ำตาลในเลือดของคนไข้โรคเบาหวานจะสูงกว่า			

ข้อ	ข้อความ	ถูกต้อง	ผิด	ไม่ทราบ
	คนปกติ			
17	มึนหัว เป็นอาการหนึ่งของโรคเบาหวาน			
18.	ผู้ที่เริ่มเป็นเบาหวานจะทานอาหารในปริมาณมากแต่น้ำหนักไม่เพิ่ม			
19.	คนไข้ควรอดอาหารและน้ำเป็นเวลา 8ชั่วโมงก่อนเข้าตรวจระดับน้ำตาลในเลือด			
20.	คนไข้โรคเบาหวานสามารถรับประทานผักใบเขียวได้ในปริมาณที่ไม่จำกัด			
21.	คนไข้โรคเบาหวานไม่ควรกินขนมและไม่ควรทานอาหารทานระหว่างมื้อ			
22.	การออกกำลังสม่ำเสมอช่วยลดความเสี่ยงของโรคแทรกซ้อน			
23.	อาหารเสริมและน้ำอัดลมเป็นสิ่งจำเป็นต่อคนไข้โรคเบาหวานเมื่อออกกำลังกาย			
24.	หากคนไข้รู้สึกมึนหัวหลักการรับประทานยา คนไข้สามารถลดหรือเพิ่มปริมาณยาได้เอง			
25.	โรคเบาหวานสามารถทำให้เกิดต้อหิน			
26.	โรคเบาหวานสามารถทำให้เกิดโรคความดันโลหิตสูง			
27.	โรคเบาหวานสามารถทำให้เกิดโรคไตล้มเหลว			
28.	คนไข้โรคเบาหวานที่รับบาดเจ็บเป็นบาดแผลเล็กๆอาจต้องพบแพทย์เป็นเวลานานได้			
29.	โรคเบาหวานคือภาวะที่ร่างกายมีน้ำตาลในเลือดสูง			
30.	วิธีการที่แน่นอนที่สุดในการควบคุมโรคเบาหวานคือการตรวจเช็คปริมาณน้ำตาลในปัสสาวะ			
31.	อาการของโรคเบาหวานอย่างหนึ่งคือการหายจากบาดแผลอย่างรวดเร็ว			
32.	การรักษาที่ไม่ดีของโรคเบาหวานอาจส่งผลให้เกิดโรคเท้าเปื่อย			
33.	การดูแลเท้าที่ดีสามารถป้องกันโรคเท้าเปื่อยได้			
34.	คนไข้ควรใช้น้ำร้อนในการล้างเท้า			

ข้อ	ข้อความ	ถูกต้อง	ผิด	ไม่ทราบ
35.	คนไข้ควรจะเช็ดเท้าให้แห้งหลักการล้างโดยเฉพาะบริเวณซอกนิ้วเท้า			
36.	คนไข้โรคเบาหวานควรใช้ครีมบำรุงผิวบริเวณเท้าและซอกนิ้วเท้า			
37.	คนไข้โรคเบาหวานควรหลีกเลี่ยงถุงน่องและเสื้อผ้าที่ที่รัดเข้ารูปบริเวณเท้าและขา			
38.	ในกรณีที่เท้าผิดปกติคนไข้โรคเบาหวานควรไปพบผู้ชำนาญที่โรคพยาบาลโดยทันที			

4. ระดับทัศนคติ

วิธีการตอบแบบสัมภาษณ์: กรุณาเลือกคำตอบที่ตรงตามความคิดของท่าน

1. เห็นด้วย หมายถึง เห็นด้วยกับข้อความนี้
2. ไม่แน่ใจ หมายถึง ท่านไม่แน่ใจเกี่ยวกับข้อความนี้
3. ไม่เห็นด้วย หมายถึง ท่านไม่เห็นด้วยกับข้อความนี้

ข้อ	ข้อความ	เห็นด้วย	ไม่แน่ใจ	ไม่เห็นด้วย
1.	ไม่มีความจำเป็นต้องควบคุมอาหารเมื่อรับประทานยาแก้โรคเบาหวาน			
2.	ไม่มีสิ่งใดที่สามารถป้องกันอาการของโรคเบาหวานขั้นเริ่มต้นไปสู่ขั้นร้ายแรงได้			
3.	อาการของโรคเบาหวานไม่สามารถป้องกันได้ด้วยวิธีการเปลี่ยนวิถีการดำเนินชีวิตเพียงอย่างเดียว			
4.	เมื่อท่านเป็นโรคเบาหวานไม่มีสิ่งใดที่สามารถหยุดยั้งความรุนแรงของมันได้			
5	มันหมูเหมาะสำหรับใช้ปรุงอาหารให้กับคนไข้โรคเบาหวาน			
6.	คนไข้โรคเบาหวานควรควบคุมปริมาณอาหารและของหวาน			
7.	การดูแลสุขภาพเล็บเป็นสิ่งไม่จำเป็นสำหรับคนไข้			

ข้อ	ข้อความ	เห็นด้วย	ไม่แน่ใจ	ไม่เห็นด้วย
	โรคเบาหวาน			
8.	คนไข้โรคเบาหวานสามารถสวมใส่ร้องเท้าส้นสูงและร้องเท้าแตะได้			
9.	การสังเกตปัสสาวะและการตรวจสอบการติดเชื้อของคนไข้โรคเบาหวานเป็นสิ่งจำเป็น			
10.	คนไข้โรคเบาหวานไม่ควรเปลี่ยนรองเท้าบ่อยในแต่ละวัน			
11.	คนไข้โรคเบาหวานไม่ควรเดินเท้าเปล่า			
12.	การตัดตาปลาหรือผิวหนังที่ด้านหนาเป็นสิ่งต้องห้ามของคนไข้โรคเบาหวาน			
13.	มันเป็นเรื่องจริงที่ว่าการควบคุมและป้องกันโรคเบาหวานที่ดีควรจะต้อง ควบคุมอาหาร ออกกำลังกายและ ทานยาที่ถูกต้อง			
14.	การกินขนมก่อนออกกำลังกายเป็นสิ่งที่คนไข้โรคเบาหวานควรทำเพื่อป้องกันระดับน้ำตาลในเลือดต่ำ			
15.	มันเป็นเรื่องจริงที่ว่าระดับน้ำตาลในเลือดสูงเป็นเวลานานเป็นอันตรายต่อ ตา ไตและหัวใจ			
16.	มันเป็นเรื่องจริงที่ว่าคนไข้โรคเบาหวานควรเข้าพบแพทย์เพื่อตรวจสอบดูอาการแทรกซ้อน			
17.	การวางแผนการรับประทานอาหารที่ดีสามารถควบคุมระดับน้ำตาลในเลือดได้			
18.	อาการปวดท้องเป็นส่วนหนึ่งของโรคเบาหวาน			
19.	การออกกำลังเป็นการเสียเวลา เพราะ ไม่สามารถช่วยควบคุมระดับน้ำตาลในเลือดได้			
20.	การเลือกทานยาควรเลือกจากการตัดสินใจของคนไข้เอง			

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5. ระดับการปฏิบัติตน

วิธีการตอบแบบสัมภาษณ์: กรุณาเลือกคำตอบที่ตรงตามความคิดของท่าน

1. สม่ำเสมอ หมายถึง ท่านปฏิบัติตนตามข้อความนั้นๆอย่างสม่ำเสมอ หรือ ครึ่งหนึ่งของเวลาว่าง ภายใน 30 วันที่ผ่านมา

2. เป็นบางโอกาส หมายถึง ท่านปฏิบัติตนตามข้อความนั้นๆบางตามโอกาส หรือ หนึ่งในสามของเวลาว่าง ภายใน 30 วันที่ผ่านมา

3. แทบจะไม่หรือไม่เคย หมายถึง ท่านไม่เคยหรือแทบจะไม่ปฏิบัติตนตามข้อความนั้นๆอ หรือ น้อยกว่าหนึ่งในสามของเวลาว่าง ภายใน 30 วันที่ผ่านมา

ข้อ	ข้อความ	ปฏิบัติสม่ำเสมอ	ปฏิบัติเป็นบางโอกาส	แทบจะไม่หรือไม่ปฏิบัติเคย
1.	ท่านได้รับการตรวจสายตาจากการแนะนำของผู้เชี่ยวชาญหรือนางพยาบาล			
2.	ท่านควบคุมอาหารเพื่อควบคุมปริมาณน้ำตาลในเลือด			
3.	ท่านตรวจสอบเท้าของท่านทุกวัน			
4.	ท่านตรวจสอบการเปลี่ยนแปลงของ สี กลิ่น ของปัสสาวะเพื่อดูการติดเชื้อ			
5.	ท่านตัดเล็บเท้าสั้นและทำความสะอาด			
6.	ท่านไม่ใช้แผ่นแปะฆ่าเชื้อทางการแพทย์เวลาที่ท่านมีแผล (medicated pads)			
7.	ท่านไปพบแพทย์เมื่อเกิดบาดแผล			
8.	ท่านทานอาหาร 3ครั้งต่อวันและขนม 2ครั้งต่อวัน			
9.	ท่านปฏิบัติตามคำแนะนำของแพทย์เกี่ยวกับการทานยา			
10.	ท่านทานอาหารที่มีรสหวานและ ขนมหวาน			
11.	ท่านทานผัก			
12.	ในหนึ่งวันท่านดื่มน้ำน้อยกว่า 6แก้ว			
13.	ในหนึ่งวันท่านออกกำลังกายน้อยกว่า 15นาที			
14.	ท่านใส่ร้องเท้าที่มีขนาดเล็กกว่าเท้าของท่าน			
15.	ในหนึ่งวันท่านแปรงฟันเพียงหนึ่งครั้งหลังตื่นนอนเท่านั้น			

ข้อ	ข้อความ	ปฏิบัติสม่ำเสมอ	ปฏิบัติเป็นบางโอกาส	แทบจะไม่หรือไม่ปฏิบัติเลย
16.	เมื่อท่านเครียดมักส่งผลกระทบต่อผู้อื่น			
17.	เมื่อท่านเป็นแผลเรื้อรังท่านไปพบแพทย์ทันทีแม้ว่ายังไม่ถึงเวลานัดหมาย			
18.	เมื่อหิวน้ำ ท่านดื่มน้ำอัดลม			
19.	ท่านทานยาตรงตามที่แพทย์สั่ง			
20.	เมื่อยาท่านหมด ท่านจะรอจนถึงวันนัด			
21.	การทานยาทำให้ท่านรู้สึกป่วย ท่านเลือกทานยาตัวอื่นๆเองเพื่อลดอาการป่วย			
22.	เมื่อท่านรู้สึกหิวและหน้ามืด ท่านเลือกทานของหวาน			
23.	เมื่อท่านรู้สึกเครียดท่านพูดคุยกับเพื่อนและญาติ			

คำถามในการสัมภาษณ์พยาบาล

1. กระบวนการหลักๆ ของโครงการดูแลตนเองของผู้ป่วยเบาหวาน (multidisciplinary programme) มีอะไรบ้าง

2. โครงการดูแลตนเองของผู้ป่วยเบาหวานจัดทำขึ้นเพื่อวัตถุประสงค์หลักๆ อย่างไรบ้าง

3. ท่านคิดว่าโครงการดูแลตนเองของผู้ป่วยเบาหวาน ได้บรรลุวัตถุประสงค์ตามที่ตั้งไว้หรือไม่ อย่างไร

4. อุปสรรคหลักๆ ที่ขัดขวางความสำเร็จของ โครงการดูแลตนเองของผู้ป่วยเบาหวาน มีอะไรบ้าง

5. ข้อดีของโครงการดูแลตนเองของผู้ป่วยเบาหวานหลักๆมีอะไรบ้าง

6. อะไรคือปัจจัยหรือเหตุผลหลักๆ ที่ทำให้โครงการดูแลตนเองของผู้ป่วยเบาหวานประสบความสำเร็จ

7. ท่านคิดว่าปริมาณความต้องการของผู้ที่อยากจะเข้าร่วมโครงการดูแลตนเองของผู้ป่วยเบาหวานเพิ่มขึ้นหรือไม่

8. ท่านคิดว่าทรัพยากรต่างๆ ของโรงพยาบาลพนมไพร อาทิเช่น แพทย์ , พยาบาล และอุปกรณ์สำคัญต่างๆ เพียงพอสำหรับการรองรับผู้ป่วยในโครงการดูแลตนเองของผู้ป่วยเบาหวานหรือไม่ ถ้าไม่พอท่านคิดว่าควรมีอะไรที่จะเพิ่มเติมหรือปรับปรุง

9. จากประสบการณ์ของท่าน อะไรคือปัจจัยสำคัญๆ ที่ทำให้ผู้ป่วยหยุดที่จะเข้าร่วมโครงการดูแลตนเองของผู้ป่วยเบาหวาน

10. อะไรคือปัจจัยหลักๆ ที่ทำให้ผู้ป่วยที่ร่วมในโครงการดูแลตนเองของผู้ป่วยเบาหวานนี้ ประสบความสำเร็จ

11. อะไรคือปัจจัยหลักๆ ที่ทำให้ผู้ป่วยที่ร่วมในโครงการดูแลตนเองของผู้ป่วยเบาหวานนี้ไม่ประสบความสำเร็จ

12.ท่านคิดว่าอะไรคือตัวชี้วัด ให้เห็นว่าผู้ป่วยที่ร่วมโครงการดูแลตนเองของผู้ป่วยเบาหวานจะประสบความสำเร็จ ในเชิงของการทดสอบในห้องปฏิบัติการทางวิทยาศาสตร์

13. ท่านมีแนวคิดหรือเทคนิค อย่างไรที่จะชักจูงให้ผู้ป่วยที่ไม่พึงพอใจกับโครงการดูแลตนเองของผู้ป่วยเบาหวาน กลับมาเข้าร่วมโครงการ

14. ในเชิงของพฤติกรรมส่วนตัว ท่านคิดว่าอะไรคือปัจจัยสำคัญๆ ที่ทำให้ผู้ป่วยในโครงการดูแลตนเองของผู้ป่วยเบาหวานประสบความสำเร็จ

15.ในเชิงของพฤติกรรมส่วนตัว ท่านคิดว่าอะไรคือปัจจัยสำคัญๆ ที่ทำให้ผู้ป่วยที่เข้าร่วมโครงการดูแลตนเองของผู้ป่วยเบาหวานไม่ประสบความสำเร็จ

16. ท่านมีวิธีอะไรบ้าง เพื่อที่จะจูงใจให้ผู้ป่วยยอมปฏิบัติตามข้อกำหนดของโครงการดูแลตนเองของผู้ป่วยเบาหวานอย่างเคร่งครัด

17. จากประสบการณ์ของท่าน โครงการดูแลตนเองของผู้ป่วยเบาหวานควรจะมีการพัฒนาหรือปรับปรุงในเรื่องอะไรบ้าง อย่างไร

18. ท่านทำงานในโครงการดูแลตนเองของผู้ป่วยเบาหวานมานานแค่ไหนแล้ว

19. พยาบาลที่ทำงานให้ต้องมีคุณสมบัติอะไรบ้าง

คำถามในการสัมภาษณ์ผู้ดูแล

1. กระบวนการหลักๆ ของโครงการดูแลตนเองของผู้ป่วยเบาหวาน (multidisciplinary programme) มีอะไรบ้าง

2. . โครงการดูแลตนเองของผู้ป่วยเบาหวานจัดทำขึ้นเพื่อวัตถุประสงค์หลักๆ อย่างไรบ้าง

3. คุณคิดว่าโครงการดูแลตนเองของผู้ป่วยเบาหวาน ได้บรรลุวัตถุประสงค์ตามที่ตั้งไว้หรือไม่ อย่างไร

4. อุปสรรคหลักๆ ที่ขัดขวางความสำเร็จของ โครงการดูแลตนเองของผู้ป่วยเบาหวาน มีอะไรบ้าง

5. ข้อดีของโครงการดูแลตนเองของผู้ป่วยเบาหวาน หลักๆมีอะไรบ้าง

6. อะไรคือปัจจัยหรือเหตุผลหลักๆ ที่ทำให้โครงการดูแลตนเองของผู้ป่วยเบาหวานประสบความสำเร็จ

7. อะไรคือปัจจัยหลักๆ ที่ทำให้โครงการดูแลตนเองของผู้ป่วยเบาหวาน ไม่ประสบความสำเร็จ

8. ท่านคิดว่าทรัพยากรต่างๆ ของโรงพยาบาลพนมไพร อาทิเช่น แพทย์ , นางพยาบาล และอุปกรณ์สำคัญต่างๆ เพียงพอสำหรับการรองรับผู้ป่วยโครงการดูแลตนเองของผู้ป่วยเบาหวานหรือไม่ ถ้าไม่พอท่านคิดว่าควรมีอะไรที่จะเพิ่มเติมหรือปรับปรุง

9. อะไรคือสิ่งที่โครงการดูแลตนเองของผู้ป่วยเบาหวานนี้คาดหวังที่จะได้รับ

10. อะไรคือปัจจัยหรือเหตุผลหลักๆ ที่ทำให้โครงการดูแลตนเองของผู้ป่วยเบาหวานประสบความสำเร็จ

11. อะไรคือวิธีการที่ดีที่สุดที่ท่านแนะนำให้ผู้ป่วยควบคุมปริมาณน้ำตาลในเส้นเลือด

12. โรคใดบ้างที่คนไข้โรคเบาหวานต้องได้รับการตรวจอย่างสม่ำเสมอ

13.จากประสบการณ์ของท่าน เพราเหตุใดผู้เข้าร่วมโครงการดูแลตนเองของผู้ป่วยเบาหวานบางรายจึงหยุดเข้าร่วมกิจกรรม

14. ในเชิงของพฤติกรรมส่วนตัว ท่านคิดว่าอะไรคือปัจจัยสำคัญๆ ที่ทำให้ผู้ป่วยที่เข้าร่วมโครงการดูแลตนเองของผู้ป่วยเบาหวานไม่ประสบความสำเร็จ

15. ผู้ป่วยที่เป็นโรคเบาหวาน มักจะมีโรคแทรกซ้อนอะไรบ้าง

16. จากประสบการณ์ของท่าน โครงการดูแลตนเองของผู้ป่วยเบาหวานควรจะมีการพัฒนาหรือปรับปรุงในเรื่องอะไรบ้าง อย่างไร

17. ท่านทำงานในโครงการดูแลตนเองของผู้ป่วยเบาหวานมานานแค่ไหนแล้ว

18. ผู้ดูแลผู้ป่วยให้โครงการดูแลตนเองของผู้ป่วยเบาหวานต้องมีคุณสมบัติอะไรบ้าง

คำถามในการสัมภาษณ์คนไข้โรคเบาหวานที่ประสบความสำเร็จในการดูแลตนเอง

1. ท่านอายุเท่าไร และมีอาชีพอะไร

2. มีบุคคลใดในครอบครัวของท่านเป็นโรคเบาหวานหรือไม่

3. ท่านเป็นโรคเบาหวานมานานเท่าไร และมีโรคอื่นๆแทรกซ้อนหรือไม่

4. ท่านทราบได้อย่างไรว่าท่านเป็นโรคเบาหวาน และมีอาการอย่างไร

5. ท่านคาดหวังสิ่งใดจากการเข้าร่วมโครงการดูแลตนเองของผู้ป่วยเบาหวาน(multidisciplinary programme)

6. เมื่อเข้าร่วมโครงการดูแลตนเองของผู้ป่วยเบาหวานแล้วรู้สึกเป็นไปตามที่คาดหวังไว้หรือไม่

7.ประโยชน์อะไรบ้างที่ท่านได้รับจากโครงการดูแลตนเองของผู้ป่วยเบาหวาน

8. ท่านคิดว่าอย่างไรกับความรู้และข้อมูลที่ทางโครงการดูแลตนเองของผู้ป่วยเบาหวานเข้าใจง่ายและเป็นประโยชน์หรือไม่

9. ท่านได้รับความรู้เกี่ยวกับโรคเบาหวานอย่างไรบ้าง กรุณาอธิบาย

10. บ่อยแค่ไหนที่ท่านมีโอกาสได้ออกกำลังกาย

11. บ่อยแค่ไหนที่ท่านได้ทำการตรวจเช็คน้ำตาลและระดับความดันเลือด

12. บ่อยแค่ไหนที่ท่านตรวจสอบเท้าและตาของท่าน

13. กรุณาอธิบายพฤติกรรมการกินของท่านเช่น ท่านทานกี่มื้อ ทานอะไรเป็นอาหารหลัก

14. ในความคิดของท่าน วิธีการใดเป็นวิธีการลดอาการของโรคเบาหวานที่ดีที่สุด
15. ท่านพึ่งพอใจกับอาการของโรคเบาหวานของท่าน ณ ปัจจุบัน มากน้อยแค่ไหน และเพราะอะไร
16. ท่านมีความจำเป็นต้องทานยาโรคเบาหวานมากน้อยและบ่อยแค่ไหน ท่านซื้อยาเหล่านั้นมาจากที่ได
17.ท่านมีการเปลี่ยนแปลงพฤติกรรมและอาการเกี่ยวกับโรคเบาหวานที่ดีขึ้นหรือไม่เมื่อเข้าโครงการดูแลตนเองของผู้ป่วยเบาหวาน
18. ท่านพึ่งพอใจมาก-น้อยแค่ไหนเกี่ยวกับโครงการดูแลตนเองของผู้ป่วยเบาหวาน
19. ท่านคิดว่ามีสิ่งใดบ้างที่โครงการดูแลตนเองของผู้ป่วยเบาหวานควรต้องปรับปรุงแก้ไข
20. อะไรเป็นปัจจัยที่สร้างแรงจูงใจให้ท่านปฏิบัติตามคำแนะนำอย่างเคร่งครัดของโครงการดูแลตนเองของผู้ป่วยเบาหวาน
21. ท่านจะแนะนำโครงการดูแลตนเองของผู้ป่วยเบาหวานนี้ต่อให้ผู้อื่นหรือไม่เพราะเหตุใด

คำถามในการสัมภาษณ์คนไข้โรคเบาหวานที่ไม่ประสบความสำเร็จในการดูแลตนเอง

1. ท่านอายุเท่าไร และมีอาชีพอะไร
2. มีบุคคลใดในครอบครัวของท่านเป็นโรคเบาหวานหรือไม่
3. ท่านเป็นโรคเบาหวานมานานเท่าไร และมีโรคอื่นๆแทรกซ้อนหรือไม่
4.ท่านคาดหวังสิ่งใดจากการเข้าร่วมโครงการดูแลต นเองของผู้ป่วยเบาหวาน (multidisciplinary programme)
5. เมื่อท่านเข้าร่วมโครงการดูแลตนเองของผู้ป่วยเบาหวานแล้วรู้สึกเป็นไปตามที่คาดหวังไว้หรือไม่
6.อะไรเป็นเหตุผลให้ท่านหยุดเข้าร่วมโครงการดูแลตนเองของผู้ป่วยเบาหวานหรือไม่ปฏิบัติตามโครงการดูแลตนเองของผู้ป่วยเบาหวาน
7. ท่านคิดว่าอย่างไรกับความรู้และข้อมูลที่ทางโครงการดูแลตนเองของผู้ป่วยเบาหวานเข้าใจง่ายและเป็นประโยชน์หรือไม่
8. ท่านพึ่งพอใจมาก-น้อยแค่ไหนเกี่ยวกับ โครงการดูแลตนเองของผู้ป่วยเบาหวาน
9. ท่านคิดว่ามีสิ่งใดบ้างที่โครงการดูแลตนเองของผู้ป่วยเบาหวานควรต้องปรับปรุงแก้ไข

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Appendix D

Foot and Eye assessment for diabetic patient

Name: **Age:** **Sex:**

Date: **Place:**

Foot assessment

Nail: ( ) No problem ( ) Problem …….

Callus: ( ) do not have ( ) Have……

Skin:

Skin Color: ( ) Normal ( ) Red ( ) Pale ( ) Swarthy

Hair loose: ( ) No ( ) Yes

Skin Temperature: ( ) Normal ( ) Warm ( ) Cold

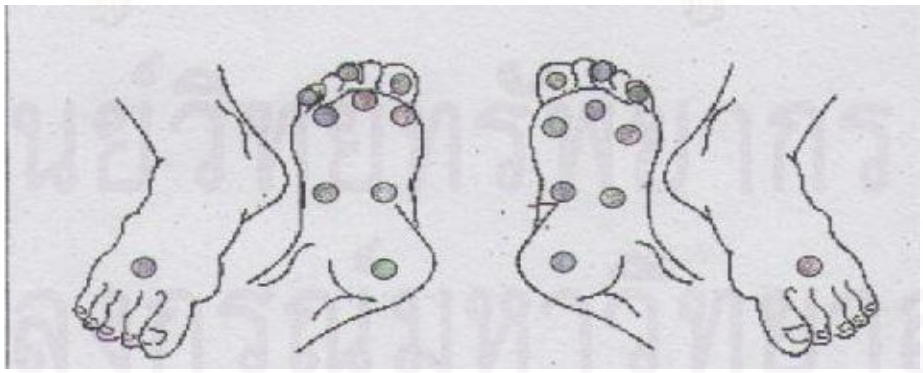
Fungus infection: ( ) No( ) Yes

Foot shape: ( ) Hammer toes ( ) Claw toes ( ) Bunions ( ) bony prominence

( ) Charcot foot( ) Normal

Pulse dorsalis pedis: ( ) right…….( ) left……

Pulse post tibial: ( ) right……..( ) left……



Right: ( ) Impair…… ( ) Normal Left: ( ) Impair…… ( ) Normal

Criteria:

Low risk: do no history cutting finger and leg or do not found loss of protective, feet unshaped, wound. Patient in this type of risk should follow up annually.

Moderate risk: found loss of protective sensation. Patient in this type of risk should follow up6 months.

High risk: found loss of protective sensation and foot unshaped. Patient in this type of risk should follow up 3 months.

Very high risk: found loss of protective sensation, foot unshaped, wound and have history of cutting finger or leg.

Eye Assessment

The criteria of eye assessment based on the expertise investigation which can be divided into 3 level:

Level 0: blur vision, cannot see properly

Level 1: Normal which mean no bleeding

Level 9: Abnormal

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Appendix E

Time Schedule

Project Procedure	Time Frame (Month)									
	Aug 09	Sept 09	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10	Apr 10	May 10
1. Literature Review										
2. Writing Thesis Proposal										
3. Submission for Proposal Exam										
4. Proposal exam										
5. Ethical Consideration from Chulalongkorn University (CPHS)										
6. Pretest Questionnaire										
7. Field preparation and data collection										
8. Data analysis										
9. Thesis and article writing										
10. Final thesis exam										
11. Submission of article for publication										
12. Submission of thesis										

Appendix F

Budget

No	Activity	Unit	Price (Baht)	Unit (number)	Total Budget (Baht)
1	Pre-Testing	Questionnaire Set	7.00		280
	-Photocopy		300/set		300
	-Stationery				
2	Data collection				
	-Photocopy	Questionnaire	7.00	440	3,080
	-Interviewers per diem	Person	300/pax	20p x 5 days	30,000
	(twenty research assistants)				
	-Transportation cost	Trip/day	200/pax	20p x 5 days	10,000
	(author and two research assistants)	Person	400/pax	20pr x5 days	40,000
	-Data Processing				
	DATA COLLECTING PROCESS			SUBTOTAL	83,660
3	Document Printing				
	-Paper + Printing	Page	10/page	4500 pages	45,000
	-Photo copy	Page	0.5/page	300	300
	-Stationary	Set	300/set	1 set	300
	-Binding Paper(exam)	Set	300/set	3 sets	900
	-Binding Paper(submit)	Set	300/set	6 sets	1,800
	THESIS DOCUMENT PROCESS			SUBTOTAL	49,300
				TOTAL	132,960

VITAE

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Education Achievement	:	Bachelor of Science in Occupational Health and Safety Huachiew Chalermprakiet University Samutprakarn Province, Thailand
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